EDITORIAL
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DISARMAMENT WILL MEAN WORLD PROSPERITY.

WHEN the great war ended millions of people the world over became highly enthusiastic over a plan for a league of all nations to abolish war forever. It was a wonderful dream, but doomed to failure because racial and national ideals and prejudices would not permit the individual nations to surrender their armies and navies to a super-government, and without the physical means to enforce its decrees on any nation or group of nations no government either world or national can be effective. As the various powers realized the impossibility of establishing a world government that could prevent wars, there began again the mad race for leadership in navies and all the engines of war. A race which has always been burdensome but which now seemed to be rushing many countries to the chaos of national bankruptcy, and, according to some predictions anarchy.

But as there have always been idle yisionaries, so there have also been men who could look into the future with understanding eyes and formulate plans that are practical. The United States is fortunate in having some men of this type in high places at the present time. They have arranged and called a conference of the world powers to discuss a limitation of armaments in order to help stabilize world business conditions, which are chaotic now because of staggering war debts, and to make future wars less probable.

Delegates Surprised By American Proposals.

Little enthusiasm was aroused even in the United States when this conference was first announced, and according to the admissions of several foreign representatives, they considered it somewhat in the light of a social affair and a sparring for advantages in the Pacific. They expected much fine language and beautiful generalities, and consequently were decidedly stunned by the proposals at the opening of the conference by the chairman, Charles Evans Hughes, Secretary of State for this government, who outlined a definite plan for scrapping of part of the war vessels already built, an immediate halting of construction now under way, and a limitation of naval ships of all classes to a stated tonnage for a period of ten years which will result in keeping the proportion of naval strength between the United States, Great Britain, and Japan at 5-5-3.

The enviable record of the United States for strict observance of all obligations entered into by it, and the international reputations of the men who represent the United States in this conference have convinced the foreign delegates of the sincerity of the proposals. At the present time the chances for the adoption of this program are excellent. Though it is not wise for the American people to become overly enthusiastic so as to encourage our representatives to become careless of our interests, but serious minded support is necessary and such support has become more evident every day since the announcement of the American proposals. This is true not only in this country, but also in the foreign countries affected, and the attitude of genial indifference has changed to one of genuine interest and approval.

Success of Program Will Mean Prosperity.

Should this program be adopted even with considerable modification, the effect on world business conditions can hardly be even estimated. It means the saving of enormous sums that would be spent for armament and applying it on the great war debts which have so seriously hindered the industrial world. This means the recovery of monies of the countries affected. In fact, the bare announcement of the proposals and the manner in which they have been received has resulted in an upward tendency of foreign money. The pound sterling has jumped to $4, the highest it has been in a long time, and others have also shown much improvement. The effect of decreased naval expenditures, decreased national debts, and a higher rate of exchange in these foreign countries means that they will enjoy greater prosperity and make them financially able to buy our products, which is absolutely necessary if we are to have any great prosperity in this country. The psychological effect also of a halt in the costly race of war preparations should be almost as great as the effect of the money saving, for it will most effectively shatter the prediction of eventual national bankruptcies and world anarchy that pessimists have kept before us for some time. And in its place we will have a genuine confidence in the soundness of the various countries and their governments and an assurance of lasting progress and prosperity.

DEVELOPING BOILER *and* RADIATOR HEATING BUSINESS *in* SUBURBS

New Residential Sections Prove a Good Field in Which to Develop the Sale of Boiler and Radiator Heating Systems as Well as the Best in Modern Plumbing for Progressive Contractors.

THE rapid growth of the city populations and the ever increasing rents have resulted in the development of a great many suburbs for strictly residential purposes. In quite a number of these sections there are building restrictions which prohibit the construction of anything but the better class of residences, and as a result they provide a fertile field for the enterprising plumbing and heating con-

View from Street of Window Display of Heating Equipment in the Shop of Menus Johnson, Chicago.

tractor, for the people who build in these sections are naturally excellent prospects for boiler and radiator heat and the best of modern plumbing.

Progressive plumbing and heating contractors are beginning to realize the possibilities these suburbs present and are locating in them and developing a most prosperous business through attractive displays of their goods and the policy of furnishing the best material and workmanship. Menus Johnson, whose shop is located in the South Shore district of Chicago, was asked recently how he developed heating business in that prosperous suburb in the southern outskirts of the city. He answered:

"Doing good work has brought me a great deal of heating business. Reliable work is what pays, and I find that most of my customers are highly satisfied with their installations. Through this kind of work I have received many jobs that otherwise would have gone to someone else.

"It is the best paying investment any contractor can make, and is advertising that really counts.

"During the last two months I have installed quite a number of small unit hot water heating plants in this suburb, and have received favorable comment from every home owner. A number of my customers have referred me to their friends who are about to build or are in need of a new heating system, and very often I have been told by these people to just go ahead and do the work.

"Since I have displayed the small heating plant I now have in my window, I have received considerable work from home owners who do not have a basement in their building. My window display has created a desire for this type of heating and much of my early work in this line can probably be traced to this display.

"When the system was first brought here I used it for my float in the Pageant of Progress parade for this district. While the men were putting the heater and the radiators on the truck I sold two systems to two women who happened to be standing near the truck watching the men. At least, it looked as if they were watching the men, but I guess they were eyeing up the plant. Anyway, there were two orders that came to me through that little effort in trying to decorate a truck for a parade.

"After the outfits had been installed in the homes of these women, I never saw two more enthusiastic people, and it wasn't long after that their neighbors were told about it. Through the favorable comment of these women I received orders from their friends, and they in turn helped out a little more.

"I have installed other heating plants in this vicinity, and through the complete satisfaction given by them, I have been able to get considerable big work which has been keeping my men busy. Building is going ahead here, and I expect to have enough heating work to keep me going for some time."

Mr. Johnson believes in keeping his show window clean and attractive. The general appearance of the shop is inviting. The office is not unlike the window, it is just as scrupulously clean, with a place for everything and everything in its place.

Charles S. Lawrence, whose shop is located on the west side of Chicago, also does a great deal of heating work in the suburbs to the west of the city. When asked how he developed this business, he said:

View from Inside of Window Display of Small Hot Water Heating Plants in the Shop of Menus Johnson, Chicago.

"I find that giving the best in workmanship and qualtiy of material is the surest way to develop a substantial heating business. In this way I can get the good will of the customer and profit by the free advertising they furnish through their favorable comments to their friends. I have

installed a good many heating plants in my day, and along with every one of them I gave the best service and workmanship that could be obtained.

"Just recently I installed a small heating plant in an undertaking establishment a few doors east of here, and if you want to hear a man talk about his heating system just call on him and he will tell you what he thinks of the outfit. In his estimation there is nothing better and his talking has resulted in my getting several other store jobs near here.

"I have had one of these small plants put on display in my window, and during the evening any number of people will stop and look in. Many of my inquiries can be traced directly to this display."

The office of Mr. Lawrence's shop is as orderly as the show window is attractive. There are no unnecessary newspapers, packages, small fittings or anything else lying about. The back of the shop is conveniently arranged, but it is Mr. Lawrence's intention to make additional changes so as to eliminate absolutely all unnecessary walking or looking for equipment.

V. R. Lundgren, located in the Windsor Park suburb of Chicago, has been very successful in selling high grade plumbing installations to home owners in that district. Mr. Lundgren has been in his new location about four months, and in keeping with the building, everything about the shop and office is orderly and clean. The show window is especially attractive because of the scrupulously clean condition in which it is kept. The whiteness of the fixtures on display and the manner in which they are set up have caused no little comment from those who have become Mr. Lundgren's customers. The display consists of an all-white, one-piece kitchen sink with mixing valve, low down tank and closet combination, pedestal lavatory and a built-in bath tub. These are the general run of fixtures which Mr. Lundgren installs in the bungalows, two-flat buildings, and large residences which make up the bulk of the construction work in the neighborhood.

"Before I moved in my own building," said Mr. Lundgren, "I was renting a building a few blocks west of here. The rent became a little too high for me so I thought the best thing to do was to build my own place and have it the way I wanted. I have plenty of room here now and can conduct my business a little differently. Before I had

Truck Used by Charles S. Lawrence, of Chicago, who has Built up a Very Prosperous Plumbing and Heating Business in the Suburbs.

hardly any space for a display of any kind, but now I can show the people of this neighborhood what I have to sell and I believe my show window has developed a large amount of business for me.

"I have been selling these high grade fixtures to my customers for some time, and along with them I have given the best in workmanship and material. From this kind of work I can trace other business. Satisfying customers is a big boost. Often they are willing to tell of other people who are about to have new plumbing installed or who are planning building a home of their own. In this way they put in a good word and in most cases some sort of business has developed."

There are hundreds of other suburbs about the country that are being built up rapidly, and the contractor in or

Window Display of Plumbing Goods Which Helps V. R. Lundgren, Chicago, Build a Successful Business in a Suburb.

near them who is intent on developing a profitable heating business should not forget that attractive window displays kept clean and orderly are advertisements that mean more business. Doing good work and following up leads that result from this work are other important points to remember.

In a "Special Letter" on the Commodity Price Situation the Harvard University committee on economic research sets forth an interesting analysis of current prices. From a table there presented the following figures have been taken. The index numbers represent October, 1921, prices expressed as percentage of average 1913 values: Grain and flour, 112; livestock, meat products, hides and leather, 97; metals and metal products, 111; fibers and textiles, 173; fuels, 158; building materials, 179; miscellaneous, 151; all commodities, 133.

In Springfield, Mass., a new departure in supplying draftsmen to manufacturing concerns has been under way since Jan. 1. The Engineering School of Drawing has been taking young men with practical mechanical or shop experience and teaching them to put properly on paper the necessary features of the design of a machine or mechanism. These men are then at the call of manufacturers, for temporary or permanent assignments, for supplementing an overloaded force or for developing a new idea or construction. The individuals are selected for such service by the head of the school, on the basis of the stated needs of the manufacturer and the observed capacities of the men available.

Labor Conditions in Cleveland show little change, according to the monthly report of the labor relations committee of the Cleveland Chamber of Commerce. The reports from industries employing over 100 men show a total of 66,797 employed Oct. 31 as compared with 68,119 on Sept. 30, or a decline of 1.9 per cent. Plants engaged in the manufacture of steel and their products employed 27,565 Oct. 31, as compared with 27,258 on Sept. 30, or a gain of 1.1 per cent. Automobile and accessory manufacturers had 7,248 employes Oct. 1, as compared with 7,773 on Sept. 30, a loss of 2.5 per cent.

BASIS *for* STANDARDS *for* ADOPTION *of* PLUMBING CODES—PART XVII

The Principles Underlying Sanitary Science and Sanitation Are the Same Everywhere and Need be Standardized—Here Are Suggestions for the Foundation of Codes—Your Constructive Criticisms and Recommendations Are Cordially Invited

By Wm. C. Groeniger

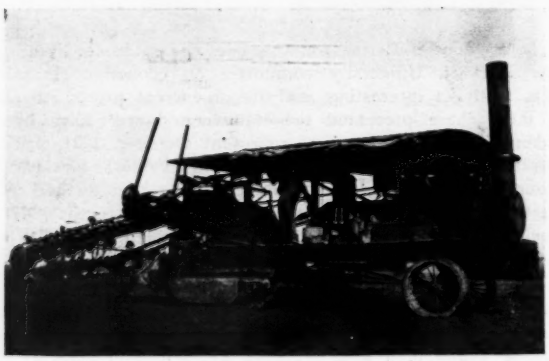
Consulting Sanitary Engineer, President, American Society of Sanitary Engineering

(Continued from Page 197 in the October 29th Issue)

TITLE XVIII. SEWERAGE, DRAINAGE, SEWAGE DISPOSAL.

Sec. 282. Separate Drainage Systems.—To facilitate possibility of separate treatment and disposal, independent sanitary, storm and industrial drainage systems should be installed in buildings.

Sec. 283. Combined Drainage Systems.—When existing municipal combined sanitary and storm water sewerage systems are available and after satisfactory treatment of industrial wastes, said systems should discharge into the combined sewer outside the foundation walls of the building.



Modern Drainage Ditch Digger.

Sec. 284. Construction, Size, Accessibility and Cleanouts.—All sanitary, storm and industrial drainage systems should be constructed so as to be permanently water-tight; horizontal piping run in practical alignment at a uniform grade; of proper size to produce self-scouring action; rigidly secured and supported to keep their grade; changes in direction, either horizontal or vertical should be made with the appropriate use of forty-five (45) degree bends, Y's, TY's, long sweep quarter, sixth, eighth and sixteenth bends; with manholes and cleanouts for accessibility and inspection.

Sec. 285. System of Sewerage for Sanitary Purposes.—This system should be separate from any sewerage or drainage systems for other than sanitary purposes. The system should be constructed so as to be practically water-tight with slopes sufficient to produce self-cleansing velocities and should be accessible for inspection and cleaning.

The system should be used to receive sewage comprising the wastes from water closets, urinals, lavatories, baths, kitchen sinks, floor drains, laundry tubs. Ordinarily, this system should not receive liquid wastes from industrial processes unless such wastes are relatively small in volume and are not of a character to be detrimental to the sanitary sewerage system and disposal features. Surface and subsoil drainage should not be permitted to enter the sanitary system.

Wherever possible, the sewage should be disposed of by discharge into a public sanitary sewer of a municipality. Where such a method is impossible, there should be independent disposal for the sewage, the treatment plant giving sufficient treatment to permit disposal of the effluent without causing a nuisance or contaminating a water supply. Approval of proposed methods of sewage treatment by the State Health authorities should be obtained.

Sec. 286. System of Sewerage for Industrial Wastes.—Unless the industrial wastes are of relatively small volume and of a character which would not be detrimental to the sanitary system, they should be conveyed in a system of sewerage independent of any other system.

This system of sewerage should be constructed substantially watertight with slopes to produce self-cleansing velocities and should be accessible for inspection and cleaning.

The system should be used to convey industrial wastes only and should not receive sewage or surface or subsoil drainage.

When a public sewer of a municipality is available and approval of the municipal officials has been secured, connection should be established to such public sewer for the disposal of the industrial wastes in their raw state or after such treatment as may be necessary and required by the municipality. If such public sewer is not accessible, independent disposal of the industrial wastes should be provided with the treatment of the same, to an extent to prevent a public nuisance or detriment to a public water supply. Advice and approval of State Health authorities should be secured.

Sec. 287. System of Sewerage for Surface Drainage.—This system should be independent of other systems of sewerage. Its construction should be substantially water-tight and its capacity should be adequate to remove the run-off without flooding.

This system should be used for the removal of surface drainage roof water, cistern overflow, subsoil drainage, clean waste water from water motors, elevators, condensers, and

cooling systems. It should not receive any sewage or industrial waste.

The outlet of the drainage system should be located so as to result in no damage resulting from the maximum expected discharge from the system.

Sec. 288. Sewage Tanks Permitted.—Settling tanks or leaching wells may be used to receive sewage or other domestic wastes only when written permission to that effect has been secured from the local board of health of the municipality in which the same is constructed, if in a municipality, and if not, then from the State Board of Health, and such permission can be given only when a public sewerage system is not available.

Sec. 289. Sewage Tanks Prohibited.—No tanks for sewage shall be constructed where a sewer is available nor shall any connection from such sewage tank be made with any sewer.

Sewage tanks now existing in premises accessible to a sewer, and sewage tanks that may hereafter become accessible to a sewer shall be discontinued, emptied of their contents, cleaned out and be filled with earth or ashes and the house sewer shall be disconnected from the old sewage tank and be reconnected with the public sewer.

Sec. 290. Water-Tight Sewage Tanks.—Where a public sewer is not available, and written authority has been secured from the proper board of health to construct such tank and there are sufficient grounds for the purpose, a water-tight settling tank may be used to receive the discharge of house sewage, which may be overflowed to a leaching well providing there is no danger of contaminating a water supply, well or spring and the soil is of an absorbent character. Otherwise, a settling tank shall only receive the discharge from water closets and sinks and the waste from all other fixtures shall discharge to a surface water course.

Sec. 291. Settling Tanks.—A settling tank for drainage shall not be less than six (6) ft. in diameter by ten (10) ft. deep in clear or its equivalent, built of cast iron; hard brick, eight (8) inches thick laid in Portland cement mortar and plastered on the inside with a one (1) inch coat of Portland cement mortar; or Portland cement concrete eight (8) inches thick, and made water-tight.

Sec. 292. Leaching Wells.—A leaching well shall not be less than the dimensions of the settling tank lined with dry brick or stone, viz: without mortar.

Sec. 293. Ring and Cover.—Settling tanks and leaching

Laying Sewers in Sandy Soil Where Revetting Is Necessary.

wells shall be provided with a twenty (20) inch cast iron ring and (perforated) cover.

Sec. 294. Location of Sewage Tanks.—No settling tanks shall be placed within two (2) ft. of any lot line or twenty (20) ft. of any building or cistern or thirty (30) ft. from any well, spring or other source of water supply used for drinking or culinary purposes and shall be maintained tight.

No leaching well shall be placed within one hundred (100) ft. of any dwelling or water-tight cistern or within three hundred (300) ft. of the source of any water supply.

Sec. 295. Sewage Tank Vents.—Sewage tanks shall be provided with perforated covers and inverts on inlet, and outlet arms shall be constructed by the proper use of Y's, sanitary tees or crosses with vertical branch open to allow

Putting in Concrete Sewers. Mixing Machine to the Right.

the free passage of air through sewage tank, house sewer, house drain and vent stacks.

Sec. 296. Piping.—The outlet from the settling tank shall be through a deep invert the same size as the house sewer, and the piping between the settling tank and leaching well may be either of vitrified tile or cast iron.

Gold Holdings in October of the United States, world's sole creditor nation, approximated $3,500,000,000 a new high record. It is estimated this is 35% to 40% of the world's visible supply. Twelve Federal Reserve Banks hold about $930,000,000.

The Immigration Quotas for seven geographical divisions of the immigration law have been exhausted for the year, including Spain, "other Europe," Palestine, "other Turkey and the Smyrna district," New Zealand, Atlantic Islands and "other Asia, including Persia." The November quotas of Greece, Jugo-Slavia, Portugal, Syria and Africa, have been wiped out through November 1 balances, but are subject to further adjustment. They are not definite and cannot be ascertained until aliens now held in the United States on account of excess quotas are charged off. The flow of third class travel to Europe continues to exceed the same class of travel to this country. Vessels which carried 6,183 third class passengers to European ports, as reported November 4th, brought 3,991 of the same class on their westbound trips.

The Total Foreign Born Population of the United States on January 1, 1920, numbered 13,920,692, representing an increase of 404,806, or 3 per cent, since 1910, according to Census Bureau figures made public recently. Of the total 6,493,088 were naturalized, 1,223,490 had taken out their first papers and 5,398,605 were aliens. Status of the remaining 805,509 was not ascertained by the enumerators. The Census Bureau said the announcement was the first ever made showing the citizenship distribution of the entire foreign born population without distinction as to race, age or sex, previous statements having been limited to males 21 years of age and over. The largest percentage naturalized in the total foreign born population of any state, 73.3, was shown for North Dakota, and the smallest, 14.8, for Arizona. The largest percentage of aliens, 78.7, was shown in Arizona, and the smallest, 11.6, in South Dakota.

GETTING OUT *of the* "HOLE *in the* WALL"

Plumbing and Heating Contractors of Bridgeport, Conn., Increase Business through "Dressing" their Windows and Showrooms

By Alfred H. French

MASTER PLUMBERS of Bridgeport, Connecticut, are way up near the head of the procession when it comes to showrooms and show windows. Some forty members of the Bridgeport Master Plumbers' Association now maintain rooms for the display of their goods, many of the number having taken up the idea within the past few months. All of them are enthusiastic about the idea and assert it has had a beneficial effect on business.

In fact it has become almost a trade doctrine in Bridgeport that an attractively arranged window, and maintenance of adequate showrooms are as essential to the modern plumbing and heating contractor's establishment as if he were in any other line of business. Those who were slow to adopt the idea are rapidly falling into line, and some of the "old timers" are making plans to move to more central locations where business men and shoppers more frequently will have opportunity to see the window displays and showrooms.

Section of Display Room Maintained by a Bridgeport, Conn., Plumbing and Heating Contractor.

Many reasons were cited for endorsement of the plan for more attractively displaying goods by contractors whom a representative of "Domestic Engineering" interviewed recently. The opinion was almost unanimous that showrooms and windows were "business getters" and as such were a good financial investment. Another assertion was that it lifted the business to a higher plane more in keeping with other lines of business.

Spread of the movement in the Bridgeport trade circles has been rapid and of comparatively recent origin. It is only within the past nine months that any great number of men in the trade paid much attention to window displays or attractively arranged showrooms. It was all right for dry goods stores and other retail establishments, but not considered a part of the plumbing and heating business. Any "hole in the wall" would do for a plumbing shop it was often contended. But the "hole in the wall" type of establishment is being left in the distance. No longer has the shop of former days a chance to compete with the more modern establishments; it is being proven that it is not good business policy to haphazardly heap up a display window or makeshift showroom with dust-covered and rusty equipment. The trade opinion appears to be unanimous that the showroom experiment is proving a success and that it is a good and sound business policy.

Lester E. Finch, secretary of Bridgeport Master Plumbers' Association, says that a majority of contractors of today have come to understand the necessity of having attractively arranged showrooms in order to do a more satisfactory and increased business. "In the days gone by," he comments, "a plumber considered it sufficient to rent a hole-in-the-wall, scatter his tools about the place and consider that the dirtier the surroundings the better the business. He would place a bathtub and a stove pipe in the dingy window to draw attention, but lacking attractiveness, it would pass unheeded by people going by the door. But in recent years, plumbers have come to realize the serious mistake in neglecting to advertise their business adequately. If the time was taken by a plumber to make a neat display in his window of a modern bathroom, set with the necessary fixtures, it would attract passersby, who before had passed the same window without noticing its contents." He estimates that about 85 per cent of the Bridgeport contractors are using the showroom idea and the few who are not in favor of the procedure are, as a rule, the old timers who hold to the old-fashioned methods.

"My experience with the showroom has been very satisfactory," said William P. Kirk, of The William P. Kirk Company, 749 Main Street, whose concern is credited with being one of the most representative in Bridgeport and southwestern Connecticut. "I have sold many fine bathroom supplies and fine fixtures off the floor," he continued. "I find cus-

tomers pleased to inspect our display, so they can see the fixtures as they really are, instead of trying to visualize them from photographs. I think fine showrooms help to build up the standard of the master plumbers' business in the mind of the public. It gives a better and more wholesome impression of our calling and stamps us as merchants and contractors, rather than the handy man who is engaged in small repair jobs."

Although a leading contractor for more than 21 years and handicapped by having a shop which offers no room for display purposes, as well as relying on the telephone to handle much of the business connected with the taking of orders, William D. Nichols, 1177 State Street, favors the showroom as an advertising proposition. In adopting this business innovation, he intends to move his business to the front part of the building, where a display window will be available. "If every plumber had an established place," says Mr. Nichols, "then the showroom would be a good thing. But when a fellow has a shop in a cellar and another no shop at all, it isn't expected that the legitimate plumber would spend money to put in fixtures to any great extent. I would like to see every plumber that is in business have some kind of a fixture display, as it would add standing to the craft in general."

Although not opposed to the showroom idea and believing such a proposition would prove successful, if carried out properly, John T. Haviland, secretary and treasurer of The L. H. Mills Company, 32 Middle Street, doubts whether the idea would be profitable in the individual case of his concern. He bases his contention on the fact that the building is situated just off the main-traveled street and on a by-way that is seldom used by the general public. "But," he emphasized, "if I had a place of business on the main street, where the buying public would pass, the showroom would undoubtedly be of great value."

"The showroom and window display, to my knowledge, are a great asset to the plumbers of today," said E. E. Stenstream, of Stenstream & Russell, 569 Park Avenue. "Without the attractive display windows in the plumbing business, the plumbers find it easier for competitors to sell more articles than they can. Although it takes time and money the showroom brings results. It is the best kind of advertisement to arrange a window with the supplies, fixtures and different accessories in such a manner as will appeal to passersby, as well as attracting prospective buyers. We find that fixtures and appliances are more readily sold if on display, than otherwise. I find neat display cards also help considerably in the plumber's shop window."

H. D. Fitzgerald, president and treasurer of The H. D. Fitzgerald Company, 29 Bassick Avenue, says: "I certainly believe in having a showroom and do not see why any of our trade should not. If I had a large place of business, I would readily use a large part of the shop for an adequate display, as people buy more when a plumber has a showroom, for they can see the actual supplies and fixtures. I believe, by all means," he concluded, "that it pays even better than newspaper advertising."

A neutral position concerning the plan was taken by C. S. Eames, of C. S. Eames & Co., 246 Middle Street, one of Bridgeport's leading and veteran plumbing contracting concerns, after watching the experience of others in the same line of business. His lack of enthusiasm was not because of opposition to the idea but because of doubt as to whether it would pay him, individually, to adopt it. This doubt is based on the fact that his establishment is one of those located on a side street and just off a heavily-traveled thoroughfare. He recalled the attractive window display which he maintained 10 or 15 years ago, in the days when Middle Street was more of a shopping and traveled thoroughfare. During recent years, however, he has considered it unnecessary to display material on such a large scale. He believes the plan is an excellent business policy, if the concern has a suitable location.

"Expenses of maintaining a display window and showroom is money well expended," according to Charles G. Swords of 1384 Park Avenue, "if it does not necessitate weakening of other departments of the business." Mr. Swords emphasizes the fact that well-arranged, up-to-date displays and general attractiveness of the establishment play an important part in making a success of the business.

View of a Bridgeport, Conn., Plumbing and Heating Contractor's Window.

WATER SUPPLY *and* PRESSURE CONTROL *in* HIGH BUILDINGS

Notes on How to Install Water Supply Piping and Control the Water Pressure in Tall Office Buildings

By L. M. Emmet

THE tall office building brought with it many problems for the plumber, not the least of which was the control of pressure at the fixtures. No very unusual strain on the risers and other piping was evident up to a few years ago, however, due to the fact that the buildings rarely exceeded a height of 225 ft. As an elevation of 231 ft. is just one hundred pounds pressure at the base, no unusual precautions were necessary beyond provision in the fixtures on the lower floors.

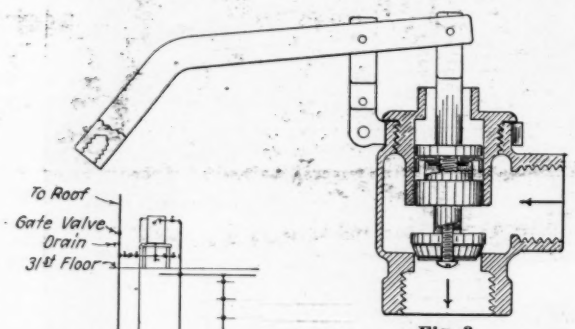


Fig. 3.

With the greatly increasing height of these structures very elaborate provision must at times be made to keep the pressures within easy working range, both for the pipe work, and to prevent too great a velocity at the fixtures.

This present description deals with the cold water supply and the fire protection of a building 31 stories high and gives alternate methods of installing the work.

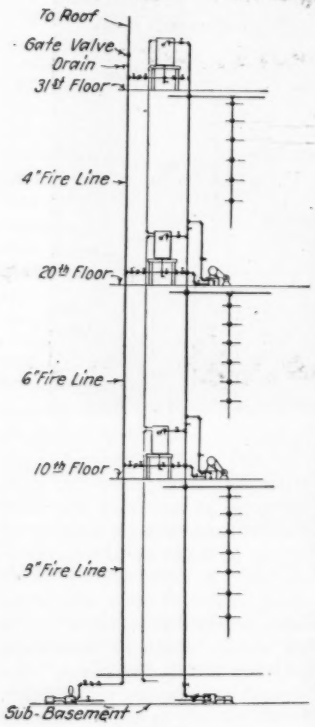


Fig. 1.

Fig. 1 gives an elevation of the system. The principal feature is the use of three tanks, one on the 10th, one on the 20th, and the highest one located on the 31st floor. By a system of valves each pump delivers to the tank 10 floors above. Water is drawn from the city mains through a surge tank located in the sub-basement, and is elevated by means of a steam-driven pump to a tank on the 10th floor; this tank supplies all the floors from the 9th to the sub-basement; it also acts as a reservoir for the upper floors. An electric pump is located at the 10th floor alongside the tank, drawing water from it, and delivering it around the by-pass valve to the 20th floor level; the tank located there supplies floors 19 to 10, inclusive, and supplies the pump for the 31st floor level.

A reference to the enlarged detail in Fig. 2 will indicate the control valves and the course taken by the water.

Each of the three tanks is supplied with a valve of angle pattern, the same being opened and closed by a float mechanism which maintains the level in the tank at the desired point. Valves are so located that any, or all, of the tanks may be cut out of service, and the system served direct by any one of the pumps for the floors above. For this reason the steam pump in the sub-basement, and all of the fittings, valves and piping are extra heavy. As at all times, either with or without the tanks, the first level pump handles the water for the entire building, and the second level pump 2-3 of the volume, the third level pump 1-3 of the volume, the pumping capacities of the pumps bear the ratio of 3-2-and 1 to each other, both as to volume and

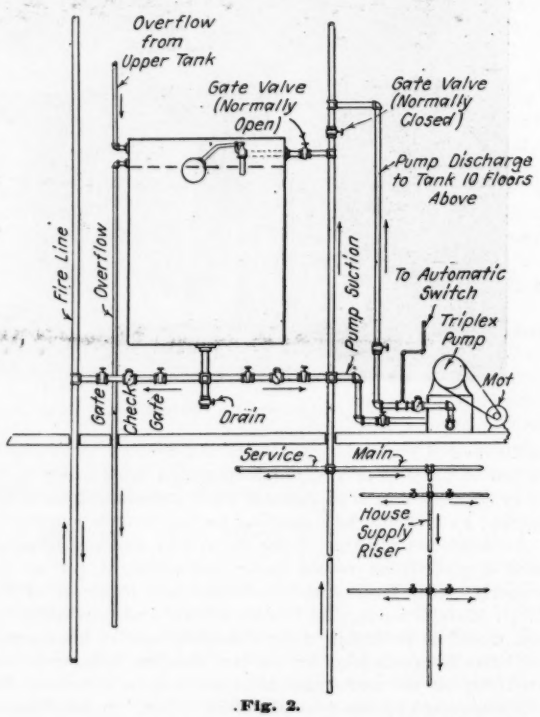


Fig. 2.

as to lifting capacity. The tanks are placed so as to regulate the pressure by elevation only, and to avoid the use of mechanical pressure regulation. The float valve in each tank, which is shown in section in Fig. 3, cuts off the water when the proper level is reached. The closing of this valve causes the pressure to rise in the supply line, and this acts on a diaphragm valve for the lower pump and a diaphragm snap-switch for the two upper pumps and shuts down the pump.

side of the check valve just mentioned; these are for use when the check valve is being examined or repaired. Normally they are open. The gate valve on the fire line leading to the roof is normally closed. The two gate valves shown on the vertical house service line are closed; these are by-pass valves; these two and the one on the top section of the fire line remain closed normally; all other valves shown on the drawing remain open. The fire line valves, fittings and pipe are extra heavy throughout.

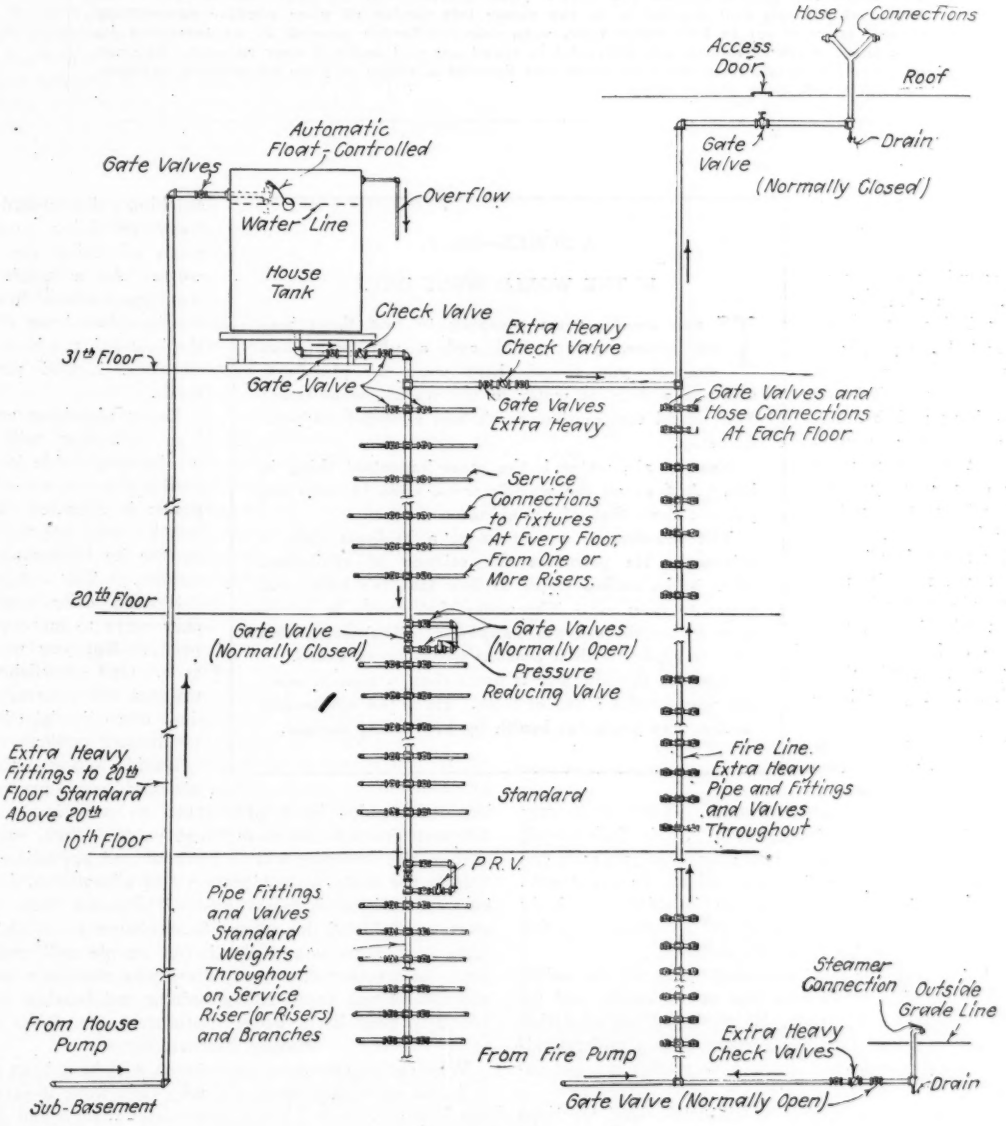


Fig. 5.

If for any reason the float valve in the tank fails to act, an overflow pipe is provided which permits the surplus to run into the tank on the next lowest level. If desired these overflow pipes may be carried down separately into the pump room and act as "tell-tale" pipes.

The fire line is carried up alongside the other lines, and continued on out to the roof. A line from each of the tanks is connected at the bottom into the fire lines, having extra heavy check valve to prevent delivery of water from the fire lines to the tanks. The object of these connections is to assure a supply of water in the event of accident to the fire pump. Gate valves are shown on each

A substitute method is shown in Fig. 4. In this plan only one tank is used, and the house service is divided into three systems, the topmost system being served directly from the tank, and the two lower through pressure reducing valves. By-pass valves are placed variously so as to permit direct service from the pump, and also to by-pass around the pressure reducing valves. These two by-pass valves are normally closed; all other valves normally open.

A third, and much more elaborate system is shown in Fig. 5. This has a separate discharge line direct from the

(Continued on Page 351.)

WISE BUYERS ARE GOOD SPENDERS

EDITOR'S NOTE:—By using one of these Editorials each week in your newspaper advertising you will help to educate your community in the true facts of plumbing and heating merchandising. Such education will create good will and build your business. The more the public knows the better your service will be appreciated. Take one Editorial a week and reprint it in the upper left corner of your regular advertising space. Have it set in bold-faced type, with rule or border around it, as indicated on this page. This will cause the Editorial to stand out and make it easy to read. The use of these Editorials from week to week will not add a dollar to your advertising expense, but they will help along sales.

THE first editorial, printed last week, dealt with the advantages of spending money at home. It was a plea for the home town dealer. It opened the way to tell the people of your community a great many things they don't know about plumbing and heating.

Now comes the second editorial. It states a plain fact—one of the many plain facts to which the public should be introduced. As a usual thing the public knows just about what it is told. Unless people are educated away from false beliefs, they will go on believing the wrong things. And these false beliefs hurt your business.

Thousands of people do not understand and, therefore, do not appreciate the value of the plumber to a community. They frequently damn him when they should praise him. It is time to call a halt. Misunderstandings cast reflections, and no man can afford reflections against a business which he represents. Everything that benefits an industry benefits everybody associated with it; anything that harms an industry is felt in one way or another by its every member.

All this being true, the least we can do is to tell the public the truth—put it right. We owe that to the public, and we owe it to ourselves. So, then, let us begin an education that will lead to a better understanding. From understanding we get appreciation, and from appreciation we get increased sales.

If you have started to use these editorials—and we hope you have—you will soon find that people are looking for them. They will expect them. And this habit of looking, expecting, reading, will bear fruit.

A SERIES—No. 2.

IF THE WORLD WENT DRY.

IF you awoke some morning to find there was no water, you would call a plumber. But suppose you found there were no plumbers, and not a drop of water in the world—what then? You would realize that death had squatted on your doorstep.

Next to air, water is the most important thing in life. And of all the world's work none is more important than that of plumbing.

The plumber is a craftsman, a business man, a scientist. He practices the science of sanitation. That is, he causes water to flow into the home and waste to flow out. The water that comes in brings with it health, energy, happiness. The waste that goes out takes with it poisons which breed death.

You see the plumber is more than a man in overalls who carries a bag of tools. He is the community doctor who promotes health by preventing disease.

Business Men Are Educators.

The worst that can be said about education is that it is slow, and the best is that it is sure.

Every real business man is an educator. If he is not, he is not long a real business man. For the public buys only as it is educated to buy. There are few things that people have to have, and most of us really want only the things we have been educated to want.

Years ago John Jacob Astor said this: "The business man of the future will be the public's teacher." His prophecy has come true. The business man has taught, and is still teaching the world better ways of living and better ways of doing the world's work. As a result we in America, where the most teaching has been done, are the best fed, the best clothed, the best housed people on earth.

Every plumbing and heating contractor will double his income, treble it—will be working overtime—when the public is educated to understand and appreciate the service he renders his community. The Advertising Editorials offer one of the easy ways to increased prosperity. But you must keep at it. One snowflake doesn't make a snowstorm. Neither does one editorial educate an uneducated public.

David Belasco, the great play producer, says that every important point in a play must be told at least three different times in three different ways. Then, says he, a part of the audience will understand and appreciate.

It is the same with education and advertising, for, at its best, advertising is educational. The more times you can state a point, and the more different ways in which you can state it, the more and the better people will understand. And don't forget that every time you educate a person to understand and appreciate plumbing and heating, you have added to your list a better customer.

Making Business Grow.

Wise customers—men and women who have been educated to know what they want and why they want it—are always the best spenders. They appreciate quality and they are willing to pay for it. The ignorant customer—the one who doesn't know values and doesn't appreciate the work you do—is apt to think he is being held up when you quote him an honest price. To teach appreciation is to raise standards, and high standard customers build a high standard business.

Here is a true story of a painter and decorator. A year ago his marriage moved him into an entirely new Chicago neighborhood. He didn't know a soul in that section of the city; had never done any work there. But, in addition to being a good painter, he is a good business man—an advertiser, an educator.

He found a fair location; decorated the front in an attractive way; put up a good sign; made a fine window display. He took space in the neighborhood newspaper and placed

an inch card in the telephone directory. He had printed a small circular, hired boys to drop the circular into mail boxes, and then made a house-to-house canvass of such homes as looked like prospects. He repeated the circular distribution every month.

The old-established painters and decorators in the neighborhood laughed at his efforts. But he kept at it. Before last summer grew into these autumn days this new painter had more men working than any of the old-timers ever thought of having. The old-timers are not laughing now. Furthermore, the new painter has enough contracts booked to keep his men busy straight through the winter.

The old painters say the new man is lucky. But he isn't. He is a hustling business educator. He has educated people to think of him and to want him to do their work.

Plumbing and heating contractors can do all that this painter has done. And when they get the habit of advertising-education they will do it.

BUSINESS TROUBLES ARE NOT MERELY PSYCHOLOGICAL.

Telling a patient to standup on his feet believing thereby that he can exert strength enough to do it might prove successful if the patient were laboring under some imaginary trouble, but would never work if he were really not strong enough to stand. It seemed to us by a similar token most unwise to offer panaceas to business in the belief seemingly that our troubles were merely psychological, writes J. H. Tregoe, secretary-treasurer of the National Association of Credit Men. There is psychology always where human enterprise is concerned but the present economic conditions are far from entirely psychological and we have been too sick to stand up on our feet merely at the word of command.

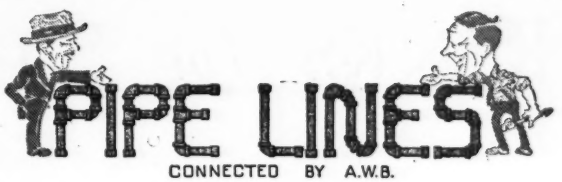
Offering remedies that would make people believe that the correction of this situation could be done overnight, has stimulated false hopes and we deprecate them immensely. Our recuperation process must be slow in order to be permanent and substantial. We were brought to a low pass by indiscretions. We played fast and loose with our commercial system. We danced and had to pay the fiddler.

Recognizing the need of bringing in better business by natural methods and not by a process of command or overnight remedies, our attitude should be of persistently working with prudence and determination to get things right and this can only be done by observing natural laws in the conduct of our own enterprises by observing prudence in the buying and selling of commodities and the extension of credit. Force of any kind might be disastrous. To give the patient credit for more strength than he has will arouse false hopes.

Common sense should be the order of the day and only by this good quality can we recognize the real need of the period and that we cannot hope for a perfectly restored patient until his strength is back and he is able to weather the hard knocks of each day.

Production of Bituminous Coal in the United States for the week ended November 5th was 9,344,000 tons against 10,968,000 tons in the previous week and 11,429,000 tons in the week ending November 5, 1920, according to Geological Survey. For the calendar year 347,565,000 tons as compared with 460,217,000 tons in the same time last year. In the week ended November 5th the output of anthracite was 1,716,000 tons as against 1,429,000 tons in the same week last year.

Water Power in Electric Power Plants conserves each month, in the United States, some 1,650,000 tons of coal, or its equivalent in fuel oil, according to figures issued by the Geological Survey. For five months, May to September inclusive, the average electric production by water power was 1,216,000,000 kwhr.; by fuels, 2,084,000,000 kwhr.



I REMEMBER.

I remember, I remember
The house where I was born,
The little window where the sun
Came peeping in at morn.

You'd hardly know the old place now,
For dad is up to date,
And the farm is scientific
From the back lot to the gate.

The little window where the sun
Came creeping in at morn,
Now brightens up a bathroom
That cost a car of corn.

We have silos, we have autos,
We have dynamos and things;
A telephone for gossip,
And a phonograph that sings.

Our milkmaid is pneumatic,
And she's sanitary too;
But dad gets fifteen cents a quart
For milk that once brought two.

MIKE QUINN, Scranton, Pa.

"You don't know nobody 'round here what ain't got no brass bung holes for sale, don't you?"

"Yes, I don't." FELIX, New York.

SCIENTIFIC SALESMANSHIP.

Selling what you have to sell to a man who doesn't want to buy it. K. K., Lincoln, Neb.

DUSTING OFF AN OLD ONE.

Teacher:—Willie, construct a sentence, using the word "notwithstanding."

Willie:—My dad wears out his pants, but not with standing. JAY EYE, Pittsburgh.

Speaking of the Rev. Tubbs being called to Bath, have you heard of the marriage of Mr. Leak and Miss Shower?

TURN, Birmingham.

THE WEEK'S BEST WHEEZE.

A Piece of Thread.

A young plumber took his lady friend to the plumbers' ball. They sat out a dance in a quiet corner. He noticed a thread or piece of string clinging to the back of her waist. Quietly he took hold of the thread, intending to throw it away and say nothing about it. But as he pulled and pulled, the thread seemed to be without end. Greatly embarrassed, and not knowing what else to do, he kept up a flow of talk while he proceeded to pull and wind and wind and pull. He unraveled and unraveled, all the time keeping the young lady in blissful ignorance of what he was doing. At last he reached the end. He threw the ball of thread under his chair, and they went home. The next morning the young lady exclaimed: "Mother, the strangest thing happened last night—the most peculiar thing I ever heard of! When I got home I found I had lost my union suit!"

B. G., Lexington, Ky.

TOAST TO THE PLUMBER.

Here's to the Plumber, so long abused
With jokes that keep the public amused.
May the jokes pass out with all that's old;
Then, perhaps, the real truth will be told.

A. M. G., Tacoma, Wash.

MAYBE SO.

A plumber was out walking with his six-year-old hopeful.

Hopeful.—We must be pretty nice people, dad.

Plumber.—What makes you think so?

Hopeful.—Why, we've never been arrested yet. FLORIDA.

Help! Help The Pipe Lines! **A. W. B.**

KINKS *for* STEAM FITTERS

Simple Methods for Solving Several Puzzling Problems

The Installation of Automatic Water Feeders.

Wherever there is a delivery of steam from a low pressure boiler the condensation from which does not return to the boiler, or where devices which use steam, and expel it to the atmosphere are connected to the boiler, such as boiler-return traps, or where humidifying devices which take steam from the boiler are attached, and in fact any loss of steam or condensation whatever, there should be installed an automatic water feeder. When there is more than one boiler, it is not necessary to install a separate feeder for each boiler.

Fig. 1 illustrates a single feeder supplying two boilers. It may be piped to supply any number desired. All that is necessary is a separate valve connection to each boiler as shown, or one connection only to the return header and one to the supply header (if boilers are in a battery setting), for the equalizing connections, and a single connection to the return header of the feed water line.

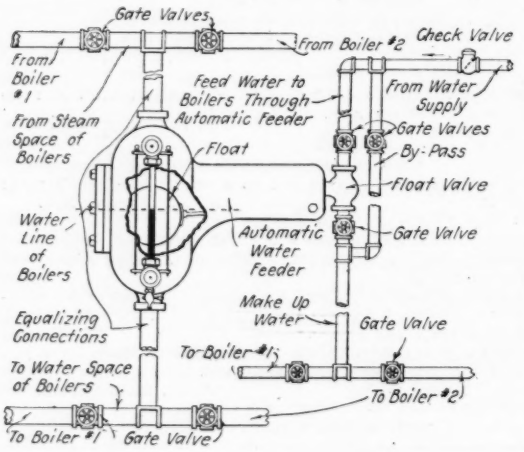


Fig. 1.

In placing the water feeder, it is well to set the water line of the feeder an inch or so lower than the normal water line of the boiler. If this is not done, the feeder tends to "flood" the boiler, due to admitting fresh make-up water when the boiler first begins to steam, and before the condensation returns. The water level in the boiler is then maintained by hand regulation of the supply valves on the by-pass, and the feeder acting then as a safety device when the water line drops in the absence of the operator.

It is well also to frequently test the device by closing the valves, draining the receiver, and note the effect when valves are re-opened.

How to Heat Elevator Shafts.

It is usually necessary to place heating surface in elevator shafts to take care of heat losses and to offset drafty conditions which would exist if no heating surface was placed.

There is very little room to place a radiator. In the past they have usually occupied a very precarious position standing on their legs on the top side of the I-beam at each floor. In a northwestern city very recently a radiator so placed tipped over sufficiently far to be struck and torn from its connections, and sent to the bottom of the shaft. No one was injured, fortunately, but an embryo panic was started by the crash, and the following clouds of steam. Some elevator inspectors strenuously object to having radiators in the shafts, due to this trouble, and sometimes even prohibit their use. One such inspector was won over to give his consent to have the shaft heated when the method shown in Fig. 2 was submitted for his approval.

The method suggests a solution for factories where ob-

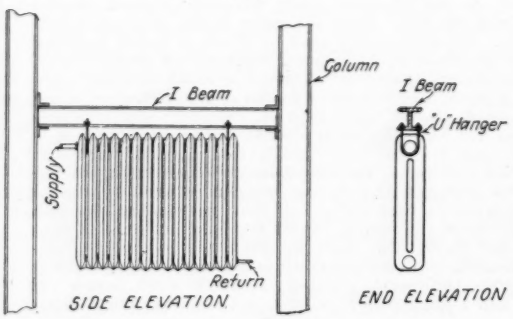


Fig. 3.

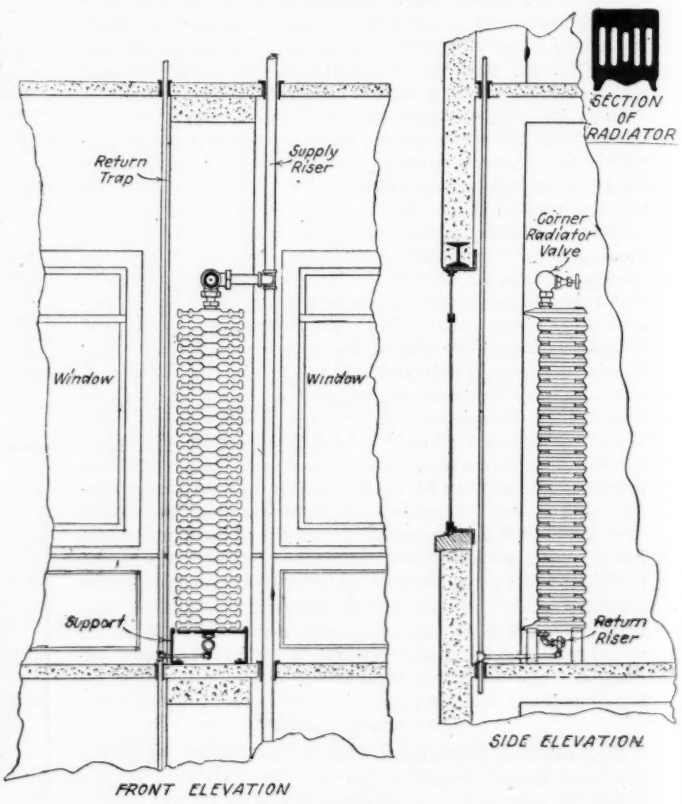


Fig. 2.

jection is made to coils which interfere with belting, shafting, crane-ways, etc. A great amount of heating surface may be placed in this manner—out of the way, and in effective locations.

Installing Window Radiation Under Difficulties.

Outside wall space is very valuable in department and similar stores.

There is a shop in a northern city devoted to very high grade women's wear, in which the window space is particularly valuable and their arrangement of bulk-head drawers prohibiting the placing of heating surface under the windows. The only remaining outside space was about 2 ft. of the width of the column. A very ingenious heating engineer solved the problem in the manner shown in Fig. 3, using window type radiators with open sections. It is a very effective installation.

WATER SUPPLY AND PRESSURE CONTROL IN HIGH BUILDINGS.

(Continued from Page 347.)

sub-basement pump to the tank, with no connections taken off. The delivery line to the building is divided into three sections, by means of two closed gate valves on the vertical line. The two lower floors are served through pressure-reducing valves, and the fire line is cross-connected into the house service line near the top. The fire line is provided with steamer connection outside the building; a check

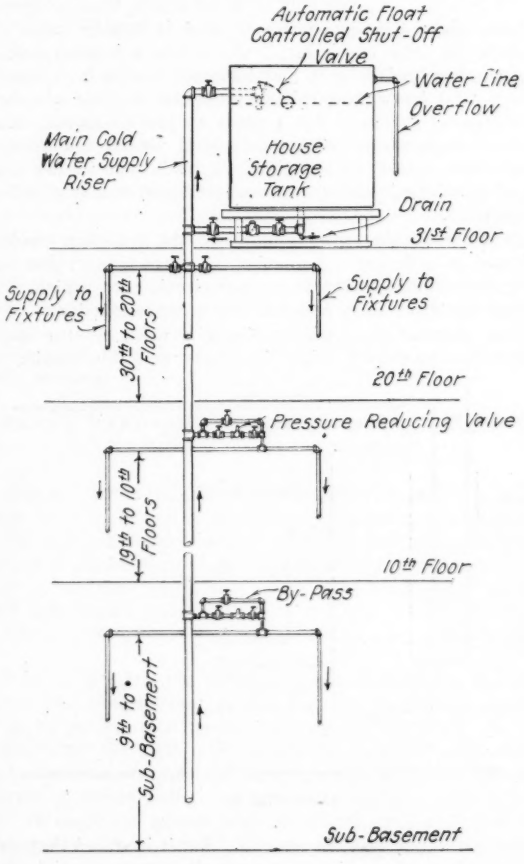


Fig. 4.

valve inside the building permits carrying the fire lines under pressure, a drain valve being placed to keep water out of the line leading outside in severe weather. A hose connection is extended out on the roof, provided with a closed gate valve and drain valve. A door is placed in the roof so that access may be had to this gate valve from the roof. Hose connections are supplied at each floor.

USING THE UNEMPLOYMENT ARGUMENT TO SELL PLUMBING.

The unemployment situation is not a pleasant phase of current economic history, but at least it can be said that it has its bright side from the standpoint of the alert plumbing and heating contractor and the wide-awake supply merchant, writes Bertram Lebhar.

The public is now in a receptive mood as regards practical suggestions for bringing about a prompt and general business revival. The consumer is willing, if not eager, to do his bit toward finding jobs for the country's idle. Therefore the plumbing and heating industry is offered a golden opportunity to cash in on the unemployment situation by bringing home to the public the fact that one of the best ways of helping to solve the problem is by putting in plumbing and heating equipment now, instead of waiting until next spring.

The striking illustration of this is afforded by the enterprise of the Standard Sanitary Manufacturing Co., which as reported in the November 12th issue of "Domestic Engineering," took a whole page in forty-two of the leading daily papers of the United States to bring this message home to householders and public officials. In display type nearly two inches tall, which stretched clear across the top of the page, this advertisement was headed:

L E T ' S G E T T O W O R K

Naturally this novel bit of publicity has caused considerable comment in the eastern metropolitan plumbing and heating circles, the general opinion being that it is going to be exceedingly helpful to local contractors in going after remodeling business. That there is a great deal of this business to be had is evident to those who are in close touch with conditions. At a recent meeting of the Eastern Supply Association the fact was brought out that there are enough dwellings in the country without bathrooms at the present time to keep every contractor busy and every plant working overtime, even though there were no new construction work going on. As an illustration of how intelligent salesmanship will land this business an amusing case recently brought to the writer's notice is worth citing. The story comes from Hallock H. Beals, president of the Biddle Purchasing Co., of New York City.

"Realizing that there are a great many houses in the Greater New York district which have no bathrooms, or inadequate plumbing facilities, we sent out some of our salesmen recently to round up this prospective business," said Mr. Beals. "At the first house one of our salesmen called at—a dwelling built and owned by the occupant—he heard a phonograph being played. The conversation that ensued was something like this:

"'I see you have a phonograph.'

"'Yes,' said the woman of the house. 'And it's paid for, too. One hundred and fifty dollars! We never buy anything we can't pay for.'

"'I suppose you prefer it to a piano?'

"'Oh, we have a piano, too. Six hundred dollars. That's paid for, as well.'

"'And I suppose you have quite a nice bathroom?'

"She hesitated for a moment. 'Well, no; we haven't a bathroom at all.'

"To cut a long story short," said Mr. Beals, "he sold that woman a complete bathroom outfit, and got paid for it right away; and he has repeated that success quite a few times since. There's plenty of business about, but it's got to be gone after vigorously. The plumber must study salesmanship a little more."

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

PROFESSOR'S IDEAS ON HOT WATER CIRCULATION DO NOT WORK.

Editor, "Domestic Engineering":—Fig. 1 is a sketch of a small circulating system that refuses to circulate the way it should. On the plan "b" is the point where the bathroom supply is taken off, and "a" is the connection for the sink.

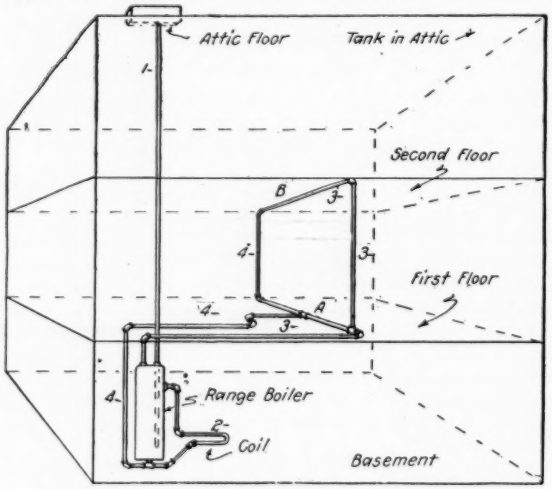


Fig. 1.

You may wonder why the circulating pipe is connected to the flow, and I can give no reason for it, only the desire of my customer. But I put a valve in the cross line, and he tells me that the results are the same whether the valve is open or closed. This job is in the home of one of the professors in the Normal School, and the changes are his suggestions. Fig. 1 is the way I connected the job, but it does not circulate to suit him.

Pipe lines are shown as follows:

1. Cold water feed from attic to range boiler in the basement, running inside the boiler and emptying near the bottom.
2. Heating coil in the furnace.
3. Hot water pipe from range boiler carrying water to the faucet in kitchen, "a," and bathroom, "b," above.
4. Circulating return pipe from faucets to bottom of range boiler.

What is the reason the above arrangement does not give hot water at the faucets except in the coldest weather when there is a roaring fire in the furnace? The water in the range boiler gets hot at other times, but the water at the faucets is only warm until a bucketful or so is drawn off. Would the arrangement indicated in Fig. 2 be better?

This differs from the other in the connections (1) and (2). The cold water feed (1) from the attic empties into the range boiler from the outside near the bottom. The heat coil (2) goes into the furnace from the side instead of the top of the range boiler.

Any suggestions you can give will be helpful to us.

Wisconsin. S. B. W.

You might tell the professor that it usually pays the "cobbler to stick to his last." As a rule a layman gets in wrong when he dabbles in plumbing and heating installations. Those who know most about plumbing are the plumbers themselves. With all due respect to professors and other men of learning, we must admit that we do not know a single man outside of the plumbing trade who knows more about plumbing installations than intelligent master plumbers themselves.

In the particular case in question the professor made a mistake in ordering the plumber to cross-connect the flow and return lines. That is a short-circuit path which must affect the circulation beyond the cross-connection.

The plumber very wisely placed a valve on the cross-connection so that it might be closed and thus render the

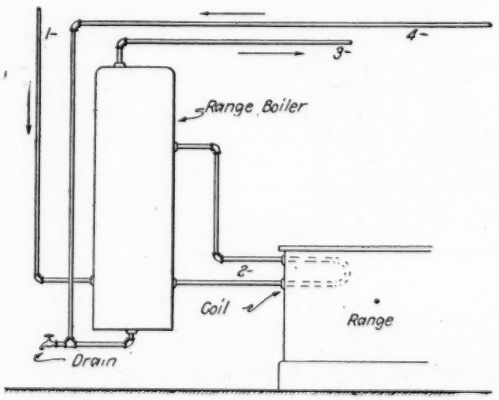


Fig. 2.

cross-connection less detrimental. But it is stated that, even when this valve is closed, the results are not satisfactory.

We see no mention of a check valve on the circulation line. If there is none, the cold water at the bottom of range boiler can easily flow up to a hot faucet and mix with the hot water, thus lowering the temperature of discharge.

There should be a very light swing check on the circulation line to prevent that back-flow.

In addition to eliminating the cross-connection, and placing a check valve on the return line near the boiler, you should go over all the lines with a spirit level and see that they all pitch up from the boiler to the faucets. This grade is necessary to prevent air-binding of the system, which will stop circulation.

We do not see that anything much will be gained by tapping the boiler at the side for circulation return, unless you wish to get along without a check valve. In that case the return tapping should be higher, say 6 inches below the boiler head. Then when water backs up through circulation line, it will be hot, not cold.

We hope the above will help you.

A QUESTION ON THE HARDNESS OF WATER.

Editor, "Domestic Engineering": While reading "Domestic Engineering" I came upon your Questions and Answers Department and I thought of a question that I would like to have answered for me.

In listing a certain sample of water for hardness, 20 cubic centimeters of standard soap solution were required to form a lather on 140 cubic centimeters of water. What was the hardness of the water expressed in parts of 100,000? To how many grams of carbonate of lime per United States gallon does this correspond?

New Jersey. A. B. J.

A method for determining the hardness of water by the metric system of quantities is as follows:

Twenty cubic centimeters of water are placed in a bottle large enough to hold 70 centimeters or more. A solution of soap of standard strength is poured into the bottle a little at a time, then shaken up well.

More soap is added, shaking the bottle each time, until a permanent lather is obtained which will stand at least 5 minutes.

The number of cubic centimeters of soap added, minus one cubic centimeter indicates the hardness of the water in degrees. This in your case shows the degree of hardness equals $\frac{20}{2} - 1 = 9°$

From a recognized table on the hardness of water we note that a 9-degree water is considered hard, having 7.6 grains of carbonate of lime in each U.S. gallon.

We trust the above will be of some help to you in solving your problem.

GREASE TRAP NECESSARY TO PREVENT SEPTIC TANK FROM CLOGGING UP.

Editor, "Domestic Engineering":—We installed a septic tank for a hotel and it was guaranteed not to fill up which it did and had to be cleaned. The manufacturer advised us to put a grease trap in the sewerage line.

Is it advisable to do so? If so what kind would we use and how would you install it?

Ohio. E. G. G.

Yes, it is advisable to place a grease trap on the sink waste line from a hotel, to intercept the grease and prevent it from getting into the septic tank.

Probably the best kind of grease trap for hotel use is the water jacket kind. In that type of grease trap the cold supply to range boiler, or hot water storage tank, is first run through the grease trap jacket, to cool and chill the grease.

At stated intervals the grease must be taken out and the trap cleaned.

Grease in a septic tank injures septic action. In the tank you are using the gravel filter bed at the outlet end may soon become thoroughly clogged if a grease trap is not used to collect the grease before it enters the tank.

REMEDY FOR RUSTY RADIATOR WHICH COLORS DOMESTIC HOT WATER SUPPLY.

Editor, "Domestic Enginering":—I have a new cast iron radiator (40 sq. ft., 38-inch, 2 column) connected up with range boiler heated by stove in basement. The water is colored, and rusty, from the radiator. Can you suggest any way to get away from this objection. I have 3 faucets

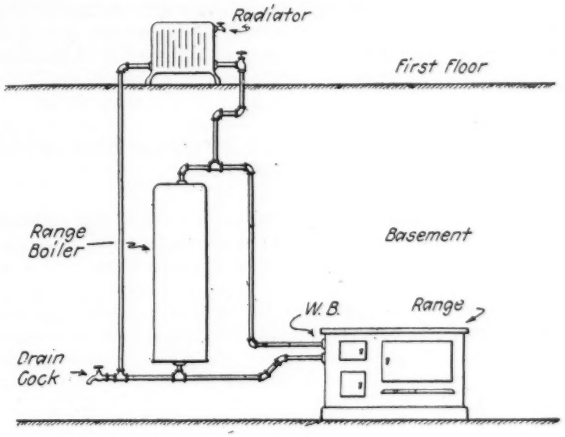


Fig. 1.

on the job to drain out system, and sketch of the installation is shown in Fig. 1, the city pressure being about 90 lb.

Washington. Western Plumber.

Probably the simplest remedy you can apply is to make up some milk of lime and line the radiator and water-back with it. The cast iron radiator and water-back are plain—not galvanized. Therefore, they will produce more rust than the galvanized piping and boiler. But if you can disconnect the radiator and water-back and fill them with milk of lime, letting them stand full for say one hour, then draining the lime out, the remaining lime which sticks to the inner surfaces may form a coating that will help prevent corrosion and discoloration of the water. We ask you to try the above plan and let the readers of "Domestic Engineering" know what success you have with the plan. It works all right with some waters, but we do not know how it will work with the water on your job. The plan is worth a trial, however, particularly if the water is soft.

RANGE BOILER SHOULD BE ALONGSIDE OF THE RANGE.

Editor, "Domestic Engineering":—Will you be kind enough to answer the following in the Questions and Answer columns of "Domestic Engineering"? I sold a large coal range in a country home. The range is to be on first floor, and they meant the boiler to be in the basement or cellar. Would this be satisfactory in regard to heating plenty of water? They have a 40-gallon boiler to heat only for hot water to the plumbing system.

New Jersey. J. F. J.

On general principles we advise against setting the range boiler in the basement and trying to heat it from a range water-back on the floor above. As a rule such installations do not work right. There is not enough circulating power to drive the water heated by the water-back down against gravity to the boiler in the basement. The tendency for water when heated is to rise, not to descend.

Sometimes, of course, conditions are so favorable in the house that a circulating loop can be run up a story or two,

then dropped to the boiler. Thus the boiler may heat fairly well, but not if you just drop down from range to boiler. That will make steam and pound, and may crack the water back, but not heat the boiler.

Then again there is always danger present. Somebody may shut off the water for repairs, having a good fire in the range. This will overheat the water-back. Then when cold water is turned on again the water-back is very liable to explode. If such a thing happens and somebody is injured or killed you may be placed in a very uncomfortable position, because an expert could easily testify that your installation was dangerous to life and limb and is in violation of safe rules of practice. We advise you against it. Place the boiler up at the range, or don't do the work at all.

ALL SEWER PIPE JOINTS SHOULD RUN WITH THE WATER.

Editor, "Domestic Engineering":—We would like to know if there is any set rule in laying vitrified sewer pipe, that is with the spigot end out or in. Would either end pass inspection?

We had one of our men lay a line a while ago and thoughtlessly he laid the line with the spigot ends in towards the house. When the job was ready for inspection, the inspector would not pass it and we had to relay the sewer.

New York. D. H. C.

The inspector was right in refusing to pass the sewer installation. It is entirely wrong to lay a sewer with the spigot ends pointing toward the building. They must run

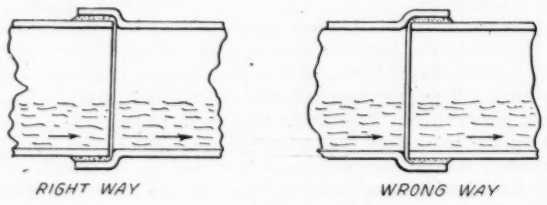


Fig. 1.

the other way, that is, with the water. Fig 1 illustrates the reason for this statement. Should the joints be imperfect, the tendency to leakage at the hubs will be very much less when the joints run in the direction of the water, as is indicated by the left-hand sketch in Fig. 1. There is also less liability of chokage when the joints run with the water. It is accepted as correct practice everywhere to have joints run with the water even in shingling or clap-boarding houses.

Freight Cars Idle because of business conditions on November 1st totalled 264,700, a reduction of 29,704 compared with the total on October 23rd, according to the American Railway Association. The reduction was largely due to increased demands for coal cars.

An Amendment has been filed with the Interstate Commerce Commission in connection with the application made on Aug. 22 to reduce westbound transcontinental freight rates and contains additions, eliminations and changes in the original application. Sucker rods and sucker rod joints in bundles have been eliminated. On the other amended items, as they relate to iron and steel, reductions have been made. On cast iron pipe and connections, for instance, it was proposed originally to substitute for the present rates, which range from $1.17½ to $1.83½ per 100 lb., a rate of $1.25 from all Eastern groups to the Colorado section, with a minimum of 40,000 lb., and to apply a rate of $1 with a 60,000-lb. minimum. In the amended application, the rates proposed are $1.15 with the higher and 90c. with the lower minimum.

OFFSIDE OPINIONS RE WINDOW DISPLAY.

By "Joe" Osier.

Realizing that it is much easier to tell men of the trade how to conduct their business and succeed—

Than to make a success of my own affairs,

I take my typewriter in hand to tell the readers of this publication what I would do to win a wad if I were figuring overhead and carrying a flock of journeymen on my feed roll.

First I would put my name and business before the public—and

I'd keep it there.

I would decide on a medium of general circulation and buy my white space the same as I would buy fittings or bathtubs. And, every time I got a chance, I'd break into print—in the news section.

Second—I would establish a reputation for high class workmanship. I'd advertise speed and service and I would give my customers—

Speed and service—

Or get back on the truck.

And third—I would brighten up, clean up and dress up my shop. I'd maintain a window display that would knock the window shoppers for—

At least six fixtures.

The Master Plumber who carries the idea under his dented derby that window displays and expensive advertising do not pay is the fellow who wears blisters on his fingers ringing up—

No Sale.

He is the man who is always short on Saturday night and is listed among—

The other bidders were:

Every banker in town knows him—

Having turned him down on numerous occasions.

The supply houses know him—from soup to cigarettes—and he is as welcome at booster meetings as a

Bible tract in a bread line.

'Cause he's wrong—like Silly Willie Hohenzollern or his son the Clown Quince—

You might say.

Without offense meant, I've seen plumbing shops that reminded me of the home of Old Tom—

Or some other town drunkard.

And, invariably the men who were trying to get blood from these turnips—

Blatantly told everybody and the world that—

A man who lets go of real "jack" for advertising and bothered with a window display is—

A Simple Simon—a boob, a goof—a simp, a sap and so on—

To the last word in the last chapter.

Then this Wisenheimer would fall over two or three decrepit tubs, bark his shins on a venerable blow torch, and finally stumble into a dark, evil smelling office where he would spend the rest of the day peering and pawing over a greasy set of books trying to figure out why—

In the name of Moses and the beards of the prophets, he couldn't get into the—

Income Tax paying class.

The buying public must be catered to. And the business man who is looking ahead will deliberately set out to appeal—

Humor, indulge and pamper the public.

He will find out what they want and he'll give it to 'em. If they expect service—that is what they will get.

If they want class—give 'em class and—

Bill 'em for it.

The day of the bull head and pin head in business is done. Today the buying public is snappy—so if you want to garner gravy—

And keep moving with the world—

Snap into it.

DOMESTIC HOT WATER SUPPLY *in* "ALL GAS" HOUSE *in* ENGLAND

Notes on the Installation of a Hot Water Supply System in a So-Called "All Gas" House, As It Is Done in England

By John Y. Dunlop, Glasgow

THERE is no other nation in the world which consumes such large quantities of coal for domestic purpose as the English race. For the reason that this type of fuel has been comparatively cheap for ages back, and even in districts far removed from the coal fields and where the cost of transporting is very costly the householder preferred to pay the price for coal rather than cut wood for the fire.

Today the cost of this type of fuel has doubled itself twice, and industrial England has discovered that the process of combustion in the open fire is such that not only is a vast amount of valuable material wasted as smoke, but this smoke pollutes the atmosphere and destroys our buildings and is doing positive harm.

Consequently many of our city authorities have been giving more than a passing thought to the pall of smoke around their cities, and many of them have come to the conclusion that 75 per cent of the smoke comes from domestic chimneys.

Most of our city fathers want a beautiful clean city, and they have the mind that by a scientific utilization of coal products a pure city could be obtained.

At the present time I am quite safe in saying that every local authority or city authority in England is erecting large numbers of workmen's houses for the housing of the people, and this crusade for the abolition of smoke in England is having this effect that many of these authorities are having their houses designed with all gas fires.

Gas fires for warming the house, gas fires for cooking, and gas fires for the domestic hot water installation, making up what we call in England an "all gas" house.

The arrangement of the pipes in domestic hot water supply with a gas fire is much the same as with a coal fire, with the exception that a gas boiler is the medium of warming the water.

Two systems are shown which are being much used in England, one is for a house with several floors, while the other has been designed for a flatted house or bungalow house.

The gas boiler in each case is fitted up in the scullery which is adjacent to the kitchen.

The heated water in the boiler, being lighter than the cold, moves to the highest point in the supply while the cold and denser particles gravitate towards the source of heat at the lowest point.

In the line diagram for the house with several floors, the towel rail and the linen cupboard coil are heated off the return from the upper floor.

The circulation to the upper bath is necessary, otherwise the lavatory basin in the upper bathroom would have to draw so much cold water before hot is obtained that it would be annoying.

The small circulating tank which is shown in the upper floor is added to the system to insure a good outflow from the bath tap as this, being so near the level of the cold cistern would be poor if no tank was provided at this level. In any case this circulation will need a half-inch vent pipe.

The flow pipe from the boiler which is 1 inch in diameter

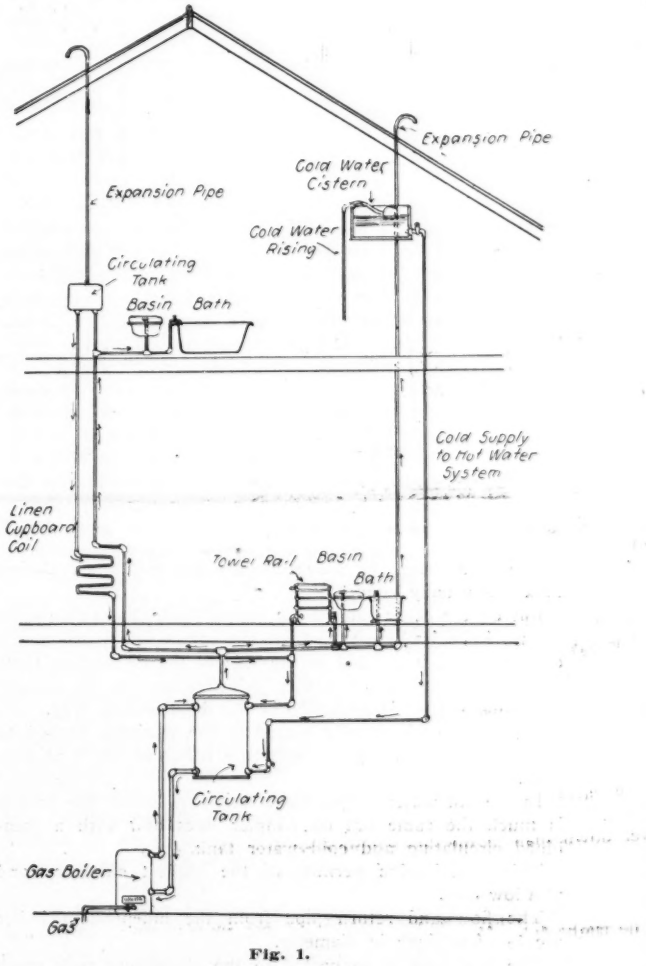


Fig. 1.

enters the cylinder 3 inches from the top and the return flow from the towel rail and coil enters on the opposite side at the same level.

The stop valve on the cold supply pipe is near the circulating tank so that the supply can be shut off without

going through the whole house. The cold water cistern under the roof is generally a wood cistern lined with lead and is of sufficient capacity to supply the largest quantity of hot water required at one time.

The average English bath holds about 15 gallons, so that the cold water cistern should be about that capacity.

Of course, a great deal depends on the source of supply from which the cold water is obtained, and in cases where the rising main is equal to giving an efficient supply at all times in the day, the cold supply cistern could be of a small capacity.

In districts where the water has to be pumped up during the night into a storage cistern, the supply to the cold water cistern would be taken from the storage cistern and in that case a large-sized cold water cistern is a necessity.

The cylinder system which is shown in both drawings is much in vogue throughout England.

faster than the cold is running in, and it gives all the advantage of drawing off directly from the expansion pipe shown in the first drawing.

The hinged nature of the draw-off pipe allows it to fall to a low level, and further, when the water falls below a certain level, a syphonic action is started so that the greater part of the contents of the cylinder can be drawn off even if there is only a small quantity of cold water running in.

For a small house a system such as this is a great inducement to put in hot water, as the material employed is less and it costs less.

The tank is placed in an elevated position in the system, and the supply to the fitting is taken out at a slightly lower level than the connection of the flow from the boiler on the opposite side.

The flow pipe is shown returning to the circulating tank,

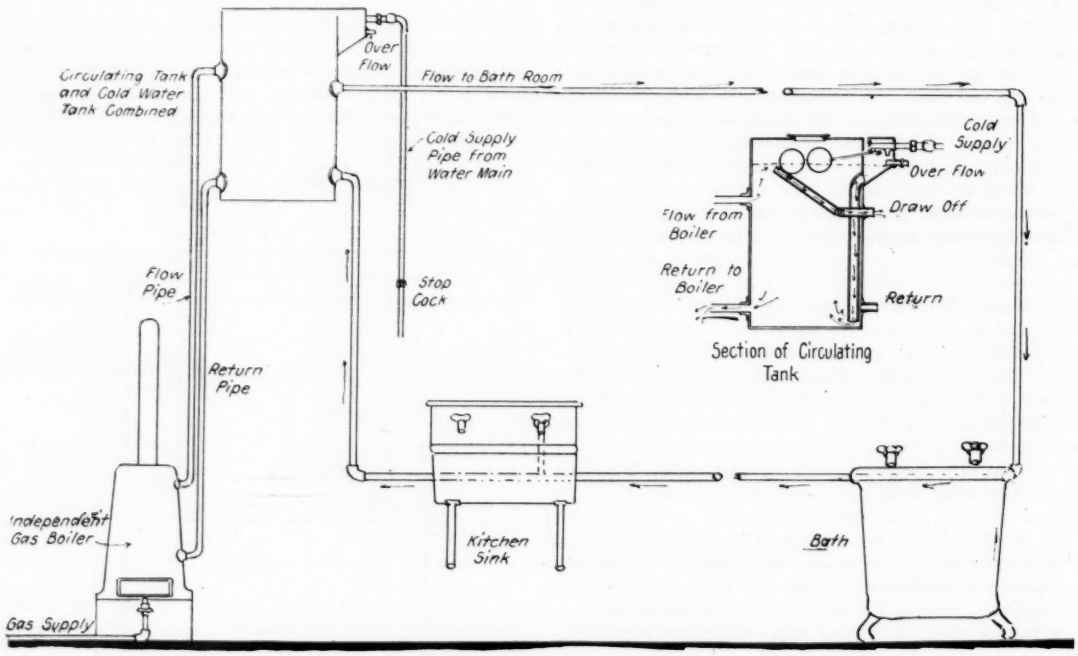


Fig. 2.

The pipes from the independent boiler to the circulating tank are usually copper.

But on the other side of the copper tank the middle class houses have lead pipe, and all the joints are wiped and a clear way stock is fixed at the side of the circulating tank.

The safety valve to use, to which plumbers in this country are much averse, is generally of the dead weight type.

The cylinder is usually placed in the working kitchen to keep the circulating pipes from the boiler as short as possible.

In the hot water supply for a bungalow house the system is much the same but on simpler lines and with a combined circulating and cold water tank.

This combination permits of the highest efficiency and at a low cost.

The flow and return pipe from the independent boiler are ¾ of an inch in diameter.

The flow pipe is connected to the circulating tank much lower down than in the last example to allow for the float-ball device shown in the section of the tank.

This device, which brings the inlet of the draw-off pipe to the highest level at all times, allows the hottest water to be drawn from the surface to which it always rises.

It also enables the hot water to be drawn off much but where the cost is to be reduced to the minimum, the return pipe could be cut out and the supply simply taken forward to the bath or sink as the case may be.

Of course, this means that to draw hot water at the sink the amount of cold water in the pipe will always have to be drawn before hot water is obtained.

North Dakota Master Plumbers to Meet in Grand Forks.

The State Association of Master Plumbers of North Dakota will hold its next annual convention in Grand Forks, N. D., March 7, 8 and 9, 1922, according to official announcement just issued by Secretary-Treasurer J. L. Hulteng, Grand Forks, N. D.

Kansas Master Plumbers to Meet at Salina, Kansas.

The Kansas Master Plumbers' Association will hold its next annual convention at Salina, Kansas, March 27 and 28, 1922, according to official notice just received from Secretary C. A. Preston, Wichita, Kansas. A trade extension lecture will be a feature of the convention.

Hagerstown, Md.—Clifford B. Harbaugh has opened a plumbing business at 249 South Mulberry Street.

Saxton River, Vt.—P. W. O'Connor has opened a plumbing establishment on Main Street.

LEGAL QUESTIONNAIRE

*Can I Take a Promissory Note Without Losing My Right to File a Mechanic's Lien?—This Question is Answered in a Most Careful Manner**

By "The Judge"

Does the Taking of a Promissory Note Extinguish Right to Mechanic's Lien?

Editor "Domestic Engineering":—After doing some steam-heating work for an old customer, I was asked to take a note for three months to cover the amount of the bill and I did so. A few days later I heard rumors of the financial insolvency of my customer and am now wondering whether I can disregard the note, which probably will not be paid, and proceed with my rights under the mechanic's lien statute. At the time the note was given to me, nothing was said about its being accepted as payment. I simply agreed to take the note. K. H. L.

Your question would seem to fall within the exception to the general rule that a mechaic's lien claimant does not waive or forfeit his rights to a lien by a taking a promissory note of the owner or the contractor for what is due him, unless the parties have agreed that the note shall have the effect of extinguishing the lien, or unless it can be shown that such was their intention. In such a case, under the general rule, the taking of the note simply suspends the right to enforce the lien until the note has matured and has not been paid.

But your situation would appear to come within the exception, as the date of the maturity of your note would fall considerably beyond the date when you would have to enforce your mechanic's lien rights. I assume that you have a contract with the owner in writing and have recorded notice of such contract, as required in your state, otherwise you have no right to a lien in any case. Even under this exception to the general rule, it is not necessary that the time of the maturity of the note be within the time when a lien must be perfected, but it must fall within the time when the lien claimant must take his first steps to perfect the lien.

It has been held in a case similar to yours, in your state, that the facts showed that the contractor intended to take the note in payment and that he had waived his rights to a lien. The court said:

"Looking at the whole transaction in the present case, it seems to us quite clear that the petitioner, when he received the notes of his debtor, had no intention to rely on his right to establish a lien, but designed to seek payment in another form and by other means. The notes were received by the petitioner before the work which he had stipulated to perform was completed; they were made payable six months or more after the time when the money would become due to him under the contract, and they were all endorsed and negotiated by the petitioner, so that he received the proceeds of them very soon after they were given.

"The legitimate and reasonable inference from these facts is, that the parties understood and intended that the notes should be substituted in the place of the plaintiff's claim under his contract; that thereby, by a negotiation of the notes, he might obtain the money which would be due him in anticipation of the completion of the work, and the person for whom the work was done might postpone to a later day the payment of the sum which would otherwise fall due as soon as the work was finished. Under such circumstances, if the petitioner had commenced an action to recover the amount due for his services and the labor and materials furnished by him, immediately after the completion of the work, can there be any doubt that he would have failed to maintain it? Would it not have been a good defence, that notes payable at a future day, which the plaintiff had negotiated, had been given for the full amount due under his contract? Clearly so. It would be the ordinary case where the presumption of payment arising from the giving of negotiable notes for a simple contract debt would have full force and effect. Nor can we see that this presumption is overcome or even weakened by the fact that the petitioner had a right of lien, which, if the notes are regarded as payment, he must be held to have waived. The enforcement of such a right is wholly inconsistent with the acts of the parties in giving and receiving the notes. To retain the lien under the contract, it was necessary for the petitioner to file a certificate on or before the expiration of thirty days from the completion of the work . . . and to commence a suit to enforce it within a month or so thereafter. But at this time, and for several months afterwards the notes which the petitioner had received on account of the work under the contract were outstanding in the hands of third parties, the indorsees to whom they had been negotiated by him.

"The result would therefore necessarily follow, if the notes were not intended as payment and the right of lien still continued in full force, that the petitioner might compel payment of the money due him under the contract by a sale of the real estate of the promisor, while at the same time the latter would be responsible for the same amount to the holder of the notes.

"We cannot think that the parties at the time the notes were given contemplated any such double liability on the part of the owner of the estate for whom the work was done. The more reasonable conclusion is, that the petitioner elected to take for his debt that which at the time it was received he might have deemed more valuable than a right of lien—negotiable notes from which he could at once obtain the money which was coming due to him at a future day under his contract. Such being the true nature of the transaction, it is quite immaterial that the petitioner, since the commencement of these proceedings, has taken up the notes which he received in payment, and now brings them into court.

"The rights of the parties were fixed and determined by the legal character of their acts and dealings at the time the notes were given, and cannot be affected or changed by any subsequent act of one of the parties, which was not original-

(Continued on Page 377.)

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the Very Nature of the Service, which is rendered without a personal interview.—Editor.

AMONG THE WHOLESALERS AND MANUFACTURERS

NEW FOUNDRY FOR STANDARD SANITARY MFG. CO.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., has had plans prepared and has awarded the contract for the construction of a foundry building in New Brighton, Pa. This structure will be one story high, with more than 26,000 sq. ft. of floor space. The building will measure 145x180 ft.

OPENS OFFICE IN BOSTON.

The C. F. Church Manufacturing Co., of Holyoke, Mass., has established an office at Room 348 Tremont Building, Boston, Mass. W. H. Taylor is in charge of the office.

OPENS NEW BRANCH OFFICE.

The Hoffman Heater Co., Lorain, Ohio, has completed arrangements for the opening of a branch office in San Antonio, Texas, to take care of business in that territory. This office will be an "off-shoot" of the company's office in Dallas, and will be in charge of A. H. Freshwater. Quarters for display and storage have been secured at 403 Main Avenue.

COMPANIES RECENTLY INCORPORATED.

The W. R. Taylor Corporation, Chicago, has been incorporated with a capital of $5,000 to manufacture in lighting, ventilating and heating specialties. The incorporators are W. R. Taylor, R. H. Stoll and T. H. Monaghan. The company will have offices at 622 West Monroe Street.

CRANE CO. TO CONSTRUCT NEW BRANCH PLANT IN DAVENPORT, IOWA.

Construction of a new branch plant in Davenport, Iowa, will soon be started by Crane Company, Chicago. The contract for erection has already been awarded. The structure will be three stories, located on West Second Street, and will cost approximately $85,000. William T. Cotter is manager of the present Davenport branch located at 624 East Fourth Street. The company has also acquired the plant of the Glenmore Lubricant Co., in Lima, Ohio, and will use it as a distributing station for its products.

NEW ADDITIONS AND IMPROVEMENTS.

Hedges & Bro., Inc., 10 Railroad Place, Newark, N. J., has recently acquired property on South Street, where the company plans the construction of a new plant to house its plumbing supply business. The land purchased is 60x100 ft.

The Youngstown Welding Co., Youngstown, Ohio, has purchased a three and one-half acre tract along the right-of-way of the Youngstown and Austintown Railroad, now under construction, and plans the erection of a plant early next year. Ultimately, the company plans the construction of three structural steel buildings, each 100x298 ft., one of which will be erected in 1922.

MOVES PLANT TO LARGER QUARTERS.

Since J. Archer Paul and Charles M. Eaton took over the Niagara Manufacturing Co., 1040-1044 Ridge Avenue, Philadelphia, the business has grown to such an extent that larger quarters were needed. These have been secured at Lancaster and Berry Streets, West Philadelphia, where the company is now occupying a three-story brick building.

THE ANNUAL MEETING OF THE MASSACHUSETTS SANITARY CLUB.

Dr. Thomas Darlington, secretary of the Welfare Committee of the American Iron and Steel Institute and former commissioner of health of New York City, gave the members of the Massachusetts Sanitary Club a talk on "Health and Efficiency" at their annual meeting at the Boston City Club, Boston, Mass., on Wednesday evening, November 9. It was more in the nature of a personal address to the members than a trade talk, although Dr. Darlington made many suggestions of good sales arguments, and it was enthusiastically received.

The Election of Directors.

During the evening the members listened to reports of their officers and elected directors for the coming year. The new directors elected were: R. V. Worthen, of Leominster; John J. Hickey, of Worcester; J. S. Kinsman, of Framingham; J. Preston Perham, of Boston; P. W. Donoghue, of Boston, and G. Wilbur Thompson, of Newton, representing the master plumbers, and Olin F. Chellis, of the Dalton Ingersoll Manufacturing Co., Boston; Robert Meacham, of the Central Supply Co., Worcester, and W. H. Shurtleff, of Brown & Wales, Boston, representing the jobbers. The directors will meet later and in accordance with the usual custom name R. V. Worthen, now president of the state association of Master Plumbers, as president. A secretary and treasurer also will be selected. Mr. Perham is the present treasurer and Mr. Shurtleff secretary and probably will be returned to office for another year.

The Secretary's Report.

The secretary's report for the year showed a total membership of 243, including master plumbers, jobbers and manufacturers. Twenty-five names were added during the year. The death during the year of Augustus Smith, of New Bedford, was noted and C. A. Maxfield and C. L. Dunham, members from that city, were named as a committee to draw up suitable resolutions.

A recommendation of the board of directors that the dues be increased from $1 a year to $2 was referred back to the board for further consideration.

G. Wilbur Thompson, president, presided at the meeting. Seated with him at the head table for the banquet, which preceded the speechmaking, were: Andrew F. Curtin, of Medford, former state president; James S. Cassedy, of Cambridge, former national president; R. V. Worthen, of Leominster, state president; Mayor William A. Bradford,

of Quincy, former state president; Olin F. Chellis, of the Dalton-Ingersoll Manufacturing Co.; E. A. Morris; Secretary W. H. Shurtleff and Treasurer J. Preston Perham.

Mayor Wm. A. Bradford's Address.

President Thompson introduced as the first speaker Mayor Bradford of Quincy, a former secretary of the association. Mr. Bradford spoke only briefly telling of the help that his training in the plumbing business had been to him in conducting city business.

Dr. Darlington's Address.

The chief speaker of the evening, Dr. Darlington, was then presented. Dr. Darlington asserted that health was the matter of first importance in life. Poor health on the part of children resulted in big expense to municipalities because of the necessity of maintaining extra schools needed when children were kept back and obliged to remain in school a year or two longer than the average; it resulted in big loss in industry through loss of time, lack of efficiency before and after illness and from poor substitutes for skilled men laid up; in the case of men of affairs illness was the cause of still greater loss to the community.

Health work was divided into three classes, he said. The performed by boards of health and similar national, state or municipal organizations; industrial health work; and personal hygiene or what people can do for themselves. The latter was by far the most important, Dr. Darlington declared, adding that in the recent war many soldiers died simply because they did not know how to take care of themselves. It would mean money in the pocket of the plumber to teach personal hygiene, he said.

The hardest things to combat in this connection the speaker said were the "old ideas." The old fashioned idea that water should not be taken with meals; that flannels should be changed at stated times; and that sleeping room windows should be kept tightly closed "to keep out the night air."

First of all, he said, everybody should submit to a physical examination, learn what if any organs are weak and treat them properly. Men were made to live not less than 100 years Dr. Darlington believed, and there was no reason why they should not with the right care.

The causes of tiredness the speaker gave as poor food; lack of food; too much food; indigestion; failure to assimulate food; or failure to get rid of waste material. Work seldom makes one tired under ordinary conditions. By means of blackboard sketches he then showed the workings of the muscles and explained in detail what being tired really meant.

To get efficiency out of workmen in factories, Dr. Darlington said, attractive toilet rooms should be supplied. If every factory in the country could be induced to put in good toilets, there would not be enough materials on hand to do the work, but that is just what the factories should do. The closets should be odorless, properly ventilated, warm in winter and cool in summer. In addition urinals should be supplied much nearer the work, and drinking fountains close at hand. Water, he asserted, was one of the most necessary things to the maintenance of good health and every workman should be within 12 ft. of a fountain. Proper care of the teeth also was necessary to health and efficiency, while cheerfulness and lack of worry also were most important.

Everybody Should Have a Bath Every Day.

Shower baths renew one's youth, Dr. Darlington said. Everybody should have a shower bath every day of his life, he asserted. A bath relieves fatigue, makes for better digestion and is beneficial in every way. Eighty-five per cent of the employes of the Tennessee Coal and Iron Company on coming from the mines at night strip off their working clothes, take a shower bath, and put on clean clothes which they have kept in their lockers. If more industrial concerns would provide opportunity for their employes to bathe regularly it would add to the health of the men and add to their efficiency thus paying good dividends to both the employes and the companies.

In closing Dr. Darlington urged his hearers to go forth and spread the gospel of sunshine and good cheer. Keep contented minds and be well and happy.

BUILDING PERMITS FOR OCTOBER.

Statistics Show 87 Per Cent Gain Over October, 1920, and 27 Per Cent Over September, 1921.

October building statistics reported to "The American Contractor" break traditions for a month which ordinarily shows falling off in permits issued by the official building departments of cities.

The 194 cities reporting for the month show $174,660,396 valuation for 52,324 permits as against $93,361,009 valuation for 32,480 permits for the same cities during October of 1920. This is an 87 per cent gain in activity over last year which will be remembered as being quite dead during the tenth month. This year's record is surprisingly gratifying, and by all logical computations means that activity has started into a swing which is going to continue in velocity for some time to come.

The figures for October, 1921, and October, 1920, follow herewith:

	October, 1921		October, 1920			
	No. of permits	Estimated cost.	No. of permits.	Estimated cost.	Per cent Gain.	Loss.
Alabama—						
Birmingham	412	$ 1,031,515	490	$ 478,568	115	....
Arkansas—						
Little Rock	255	329,636	156	149,235	120	....
Arizona—						
Phoenix	57	75,914	201	265,712	....	72
California—						
Alameda	52	73,021	40	108,137	....	33
Berkeley	280	371,326	118	334,762	10	....
Fresno	242	345,468	262	333,470	3	....
Long Beach	434	2,127,360	455	1,097,270	93	....
Los Angeles	4,489	9,781,394	3,210	6,431,661	52	....
Oakland	673	1,245,220	463	520,717	139	....
Pasadena	371	1,123,131	300	390,851	187	....
Sacramento	318	489,226	154	135,180	261	....
San Diego	417	1,016,873	335	390,177	160	....
San Francisco	672	2,498,523	418	1,399,055	78	....
San Jose	76	116,890	66	227,225	....	49
Stockton	129	225,770	82	328,123	....	32
Colorado—						
Denver	587	1,033,700	338	366,250	182	....
Pueblo	101	102,472	78	110,000	....	7
Connecticut—						
Bridgeport	109	253,400	130	257,005	....	2
New Haven	135	466,105	123	355,790	31	....
Delaware—						
Wilmington	113	157,011	82	73,910	112	....
District of Columbia—						
Washington	759	3,384,608	581	806,008	319	....
Florida—						
Miami	166	347,400	273	448,200	....	23
Pensacola	75	47,804	140	55,793	....	15
Georgia—						
Atlanta	381	1,074,272	208	817,241	31	....
Augusta	195	307,155	185	166,188	84	....
Savannah	73	154,540	48	140,000	10	....
Idaho—						
Boise	117	91,457	97	218,221	....	59
Illinois—						
Aurora	53	164,470	22	33,410	392	....
Chicago	876	10,457,250	246	3,538,150	195	....
Decatur	85	179,700	55	162,800	10	....
East St. Louis	70	152,531	52	59,782	155	....
Evanston	121	531,990	50	101,303	425	....
Peoria	73	202,620	56	77,555	70	....
Quincy	3	5,700	6	94,000	....	94
Rockford	168	244,420	100	176,130	38	....
Springfield	192	191,985	119	173,880	10	....
Indiana—						
Fort Wayne	137	410,765	80	242,005	69	....
Gary	49	304,750	61	165,646	83	....

	October, 1921		October, 1920			
	No. of permits	Estimated cost.	No. of permits.	Estimated cost.	Per cent Gain.	Loss.
Hammond	45	119,650	40	164,850	....	28
Indianapolis	1,069	1,743,532	792	2,042,236	....	15
Richmond	31	28,250	28	27,450	2	....
South Bend	235	360,552	312	131,807	173	....
Terre Haute	95	113,010	59	41,845	170	....
Iowa—						
Cedar Rapids	136	170,607	81	103,160	65	....
Davenport	102	183,170	60	47,280	285	....
Des Moines	141	486,618	72	205,660	136	....
Dubuque	40	105,275	23	14,763	613	....
Mason City	35	28,475	18	30,750	....	8
Sioux City	127	290,975	83	151,275	92	....
Kansas—						
Kansas City	76	114,825	42	38,310	199	....
Leavenworth	15	35,700	3	21,000	70	....
Topeka	121	173,840	55	120,090	44	....
Wichita	358	1,176,542	128	265,012	343	....
Kentucky—						
Covington	58	94,735	44	51,815	82	....
Lexington	69	72,635	79	56,775	27	....
Louisville	266	773,500	196	176,400	338	....
Louisiana—						
New Orleans	268	727,475	137	3,687,811	....	81
Shreveport	247	365,905	174	256,250	42	....
Maine—						
Portland	95	172,480	57	108,140	59	....
Maryland—						
Baltimore	1,729	1,775,760	397	1,219,827	45	....
Cumberland	41	146,495	31	24,869	440	....
Massachusetts—						
Beverly	36	50,060	26	20,965	38	....
Boston	845	2,310,896	661	914,334	152	....
Brockton	119	103,075	60	37,835	172	....
Cambridge	93	253,525	89	728,248	....	66
Chelsea	28	176,350	28	21,110	735	....
Chicopee	38	132,275	30	124,050	6	....
Fall River	90	180,700	65	215,435	....	17
Fitchburg	46	60,755	34	171,980	....	65
Haverhill	52	96,800	31	39,625	144	....
Holyoke	36	68,230	26	47,925	42	....
Lawrence	88	530,605	33	94,500	461	....
Lowell	145	140,699	79	97,310	44	....
Lynn	62	90,134	39	25,640	251	....
Medford	52	80,920	42	54,095	49	....
New Bedford	87	374,433	73	509,700	....	27
North Adams	20	90,320	5	24,000	276	....
Quincy	107	200,770	58	89,464	123	....
Salem	72	74,935	61	30,880	142	....
Somerville	81	429,715	30	122,295	251	....
Springfield	181	1,000,775	75	166,360	501	....
Waltham	33	46,150	15	16,650	177	....
Worcester	226	570,810	197	296,205	92	....
Michigan—						
Battle Creek	100	114,431	64	37,587	204	....
Bay City	187	64,652	46	66,370	....	2
Detroit	1,620	3,716,270	1,574	6,837,890	....	46
Flint	260	558,444	385	894,608	....	38
Grand Rapids	322	395,660	190	185,901	112	....
Jackson	72	223,265	80	49,225	353	....
Kalamazoo	91	123,680	40	191,648	....	36
Lansing	201	225,751	124	381,440	....	41
Saginaw	178	87,049	128	136,804	....	37
Minnesota—						
Duluth	147	153,120	216	373,498	....	58
Minneapolis	943	2,072,165	567	1,148,425	80	....
St. Paul	555	1,064,178	245	619,658	71	....
Missouri—						
Kansas City	555	2,771,600	266	1,017,050	172	....
Springfield	53	59,575	53	82,105	....	28
St. Joseph	105	192,903	71	61,715	212	....
St. Louis	992	1,557,173	740	1,055,730	47	....
Montana—						
Butte	22	5,280	34	8,840	....	41
Nebraska—						
Lincoln	70	122,880	58	159,702	....	24
Omaha	195	572,640	93	630,830	....	10
New Hampshire—						
Manchester	126	131,770	80	1,957,337	....	94
New Jersey—						
Atlantic City	364	1,287,275	207	116,715	1002	....
Bayonne	42	82,635	25	165,200	....	50
Camden	91	256,061	58	85,125	200	....
East Orange	97	281,286	77	354,635	....	21
Elizabeth	96	266,896	47	123,280	116	....
Hoboken	26	43,662	24	47,465	....	9
Jersey City	142	998,082	107	387,768	156	....
Orange	61	162,400	45	52,382	210	....
Passiac	51	294,850	33	66,350	344	....
Paterson	203	1,473,884	134	168,591	774	....
Plainfield	31	156,532	29	64,292	143	....
Trenton	125	613,787	130	259,863	136	....
West Hoboken	46	121,220	24	24,525	394	....
New Mexico—						
Albuquerque	39	52,926	32	42,188	25	....
New York—						
Albany	206	553,223	215	431,020	28	....
Auburn	29	92,556	13	30,550	202	....
Binghamton	332	159,726	260	105,398	51	....
Buffalo	602	1,184,000	373	1,106,000	7	....
Mt. Vernon	55	215,413	53	284,250	....	21
New York City:						
Boro Manhattan	310	22,729,428	265	3,914,306	480	....
Boro Queens	1,744	9,602,150	583	1,947,185	393	....
Boro Richm'd	272	918,137	142	311,934	194	....
Boro Brooklyn	1,533	12,296,360	1,078	5,651,719	117	....
Boro Bronx	719	6,707,362	392	927,365	623	....
Niagara Falls	90	403,962	90	447,160	....	10
Rochester	535	3,021,125	304	414,307	629	....
Schenectady	71	67,311	42	66,630	1	....
Syracuse	239	438,290	218	434,065	1	....
Troy	23	30,027	31	36,958	....	19
Utica	103	351,600	71	248,350	41	....
Yonkers	84	502,900	66	524,400	....	5
North Carolina—						
Charlotte	44	30,400	30	93,635	....	68
Wilmington	18	70,500	18	92,900	....	25
North Dakota—						
Fargo	37	180,470	31	342,000	....	48
Ohio—						
Akron	211	360,840	271	448,172	....	20
Canton	216	367,776	136	183,295	100	....
Cincinnati	1,365	1,159,775	954	1,210,550	....	5
Cleveland	1,032	5,117,300	1,033	2,010,550	154	....
Columbus	423	687,355	294	612,910	12	....
Dayton	270	718,430	167	298,065	141	....
Hamilton	41	57,870	44	99,054	....	42
Sandusky	33	30,441	30	98,115	....	69
Springfield	73	54,275	27	16,245	234	....
Toledo	305	373,449	296	526,684	....	30
Youngstown	119	168,120	136	523,100	....	68
Oklahoma—						
Muskogee	36	111,069	20	114,890	....	4
Oklahoma City	298	879,837	147	459,708	91	....
Tulsa	178	723,150	171	664,649	8	....
Okmulgee	34	97,750	37	124,750	....	22
Oregon—						
Portland	1,441	1,942,510	927	694,730	179	....
Pennsylvania—						
Allentown	83	491,675	72	887,900	....	44
Altoona	131	152,477	101	72,774	109	....
Bethlehem	32	32,135	17	17,025	88	....
Easton	41	209,370	25	66,985	212	....
Erie	165	358,085	92	191,675	86	....
Harrisburg	58	283,245	35	98,900	186	....
Johnstown	78	1,340,000	58	470,000	127	....
McKeesport	35	112,025	20	31,200	....	....
Philadelphia	1,529	5,533,225	1,082	2,590,865	113	....
Pittsburgh	524	4,134,978	391	1,783,319	131	....
Reading	40	162,950	48	289,075	....	44
Scranton	68	66,329	46	737,114	....	91
Wilkes-Barre	78	240,548	76	123,525	94	....
York	24	48,985	9	12,078	305	....
Rhode Island—						
Central Falls	21	61,685	9	12,250	403	....
South Carolina—						
Charleston	53	133,558	37	231,948	....	43
Columbia	123	117,139	82	96,614	21	....
South Dakota—						
Sioux Falls	35	407,200	38	738,651	....	45
Tennessee—						
Chattanooga	188	83,753	193	219,691	....	62
Knoxville	133	225,030	74	93,437	140	....
Memphis	391	921,540	207	334,195	175	....
Nashville	365	287,106	306	98,654	191	....
Texas—						
Dallas	314	1,081,277	213	790,687	36	....
El Paso	160	405,883	86	188,505	115	....

	October, 1921		October, 1920			
	No. of permits	Estimated cost.	No. of permits.	Estimated cost.	Per cent Gain.	Loss.
Fort Worth	249	471,292	135	502,201	....	7
Galveston	498	241,383	342	38,216	531	....
Houston	646	718,293	383	443,025	62	....
Utah—						
Ogden	53	111,565	38	248,790	....	56
Salt Lake City	119	284,610	60	94,537	201	....
Virginia—						
Norfolk	110	270,130	109	275,884	....	3
Portsmouth	37	61,371	33	64,942	....	6
Richmond	203	553,883	149	352,138	57	....
Washington—						
Everett	168	28,702	122	35,395	....	19
Seattle	960	750,115	816	758,385	....	3
Tacoma	394	251,809	280	178,977	40	....
West Virginia—						
Charleston	100	170,298	51	123,000	38	....
Huntington	153	423,193	85	152,383	177	....
Wheeling	102	160,195	54	49,237	225	....
Wisconsin—						
Kenosha	104	109,140	155	147,908	....	27
Madison	130	226,097	47	70,350	221	....
Milwaukee	671	3,660,431	406	1,577,659	132	....
Oshkosh	100	86,365	42	36,518	136	....
Racine	87	124,249	86	151,845	....	19
Sheboygan	92	60,741	76	44,141	37	....
Wyoming—						
Cheyenne	22	49,880	21	31,963	56	....
Total	52,324	$174,660,396	32,480	$93,361,009	87	....

RESOURCES OF 30,815 BANKS REACH NEARLY FIFTY BILLION DOLLARS.

A comparative statement of the condition of reporting banks, as shown the last bank call, was made last week by Controller of Currency Chrissinger, in Washington. It shows that the banking system is sound, although there has been a reduction of $3,390,269,000 in resources since June, 1920. The aggregate resources of the 30,815 reporting banks are $49,688,839,000.

The number of reporting banks include 8,154 national banks with resources, including rediscounts, of $20,517,862,000; 13,875 state banks with resources of $14,199,099,000; 623 mutual savings banks with resources of $6,040,121,000; 978 stock savings banks with resources of $557,910,000; 1,477 loan and trust companies with resources of $8,298,541,000; and 708 private banks with resources of $175,306,000.

Analyzing the Report.

"The total resources of the 8,154 national banks on June 30, 1921, including rediscounts of $879,416,000, were $20,517,862,000, a reduction during the year of $2,893,391,000," the controller reports. "Loans and discounts, which include paper rediscounted, acceptances and letters of credit, amounted to $12,242,802,000, compared with $14,085,056,000 on June 30, 1921.

"The investments of these banks amounted to $4,025,081,000, a decline during the year of $161,384,000. Of the total investments $2,019,497,000 were United States securities, approximately $719,000 being old United States bonds deposited to secure circulation. Balances due these banks from other banks, bankers, and trust companies on June 30, 1921, amounted to $1,344,519,000, a reduction during the year of $531,449,000.

"Due to a reduction in the deposits in national banks. their lawful reserve with federal reserve bank was reduced during the year $205,028,000, the amount of reserve on June 30, 1921, being $1,040,205,000. The cash in the vaults of these banks on June 30 was $374,349,000, or $76,002,000 less than the amount reported June 30, 1920.

Capital Stock Increases.

"Capital stock increased in the year from $1,224,166,000 to $1,273,880,000, while surplus and undivided profits, including amounts set aside as reserve for miscellaneous purposes, decreased from $1,533,172,000 on June 30, 1920, to $1,522,411,000 on June 30, 1921. Deposits to the credit of other banks and bankers were $693,009,000 less than on June 30, 1920, the aggregate on June 30, 1921, being $2,151,011,000.

"Individual deposits, including postal savings, but exclusive of United States deposits to the amount of $249,039,000, were $12,742,281,000, or $1,393,332,000 less than the amount reported June 30, 1920. Rediscounts were reduced during the year from $1,214,516,000 to $879,416,000; and the liability on account of bills payable, including all other obligations representing borrowed money, was reduced from $991,552,000 to $592,563,000."

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by the "American Contractor":

$1,000,000 bank and office building, Cleveland, Ohio; The Warranty Secured Discount Company.

$900,000 school, Sioux Falls, S. D.; Board of Education.

$850,000 plant, Bay Village, Ohio; Northern Ohio Light & Power Co.

$600,000 factory, Chicago, Ill.; M. Born & Company.

$500,000 school, Cleveland, Ohio; Board of Education.

$350,000 dairy building, Ithaca, N. Y.; State of New York.

$200,000 warehouse, Nashville, Tenn.; H. G. Mill Company.

$200,000 church, Chicago, Ill.; Evangelical Lutheran Church.

$175,000 stores & apartments, Newport News, Va.; Newport News Building Corporation.

$150,000 school, Rockton, Ill.; Board of Education.

$150,000 apartment building, Chicago, Ill.; Chas. Regler.

$150,000 gymnasium, Superior, Wis.; Wm. J. Kittle.

$125,000 bank, Atlantic City, N. J.; Guaranty Trust Company.

$100,000 church, Buffalo Park, Kan.; R. C. Church.

$100,000 school, Throop, Pa.; Throop School District.

$100,000 bank building, Cleveland, Ohio; The Union Trust Company.

$100,000 hotel, Chicago, Ill.; David Lipsey.

$100,000 apartment, Cleveland Heights, Ohio; the Monson Realty Co.

$500,000 factory, Syracuse, N. Y.; A. E. Nettleton Shoe Co.

$300,000 school, St. Louis, Mo.; Rosatti Kain Catholic High School.

$300,000 school, Harrisburg, Ill.; Board of Education.

$300,000 temple, Springfield, Mo.; Abou Ben Adhem Shrine Mosque.

$250,000 plant, Norfolk, Va.; Anheuser-Busch Company.

$200,000 school, Springfield, Mo.; Board of Education.

$1,550,000 school and boiler house, Cleveland, Ohio; Board of Education.

$750,000 school, Fort Wayne, Ind.; Board of Education.

$600,000 sewerage plant, Toledo, Ohio; Toledo, Ohio.

$200,000 theatre, Recreation Bldg., office and stores, Milwaukee, Wis.; Teutonia Avenue Realty Company.

$150,000 school, Cleveland, Ohio; Board of Education.

$303,560 school, Cleveland, Ohio; Board of Education.

$300,000 school, Harrisburg, Ill.; Board of Education.

$250,000 store building, Richmond Va.; Thalhimer Bros.

$200,000 school, Philadelphia, Pa.; Board of Education.

$200,000 armory building, Chicago, Ill.; State of Illinois.

$164,750 office building, Trenton, N. J.; New Jersey State House Comm.

According to the Bureau of Foreign and Domestic Commerce, the exports of refined oil for September were practically the same as for August but about 8,000,000 gallons more than for the same month last year. For the nine months to October 1st, the exports show a decline from those of the preceding year amounting to 185,000,000 gallons, or about 10 per cent.

Personal Mention

O. A. Kroos, secretary of the Kohler Co., of Kohler, Wis., left this week on a business trip to the Pacific Coast ,the Northwest and the Southwest. He expects to be gone several weeks and will visit the company's distributors in these parts of the country.

W. F. Meyer has joined the sales force of the Milwaukee Flush Valve Co., of Milwaukee, Wis., and will cover Chicago and vicinity for this company.

W. J. Lantz, western sales manager of the Duro Pump & Manufacturing Co., Dayton, O., is now making his headquarters at the company's Chicago office, 610 Wrigley Building, and has succeeded F. B. Kurtz as branch manager of this office.

Warren S. Hillis, for six years manager of the Chicago branch of the United States Radiator Corporation, has been appointed general sales manager for the American District Steam Co., with headquarters at this Company's general offices in North Tonawanda, N. Y.

E. A. Morris, president of the Detroit Lead Pipe Works, Detroit, Mich., has just returned from a ten day's trip to the oil fields of Texas. He was present at the opening run of the Morris Refinery at Waco last Saturday. S. F. Morris is secretary and treasurer of the refining company, and E. A. Morris and his son are interested in the business. Mr. Morris reports business very good throughout the oil country.

TRADE LITERATURE

Damper Regulator Folder.

The E. J. Deegan Mfg. Co., New York City, has just issued a folder which describes and illustrates the Deegan automatic regulator for use on water boilers and tank heaters.

Folder of Bathroom Trimmings.

The Sanitary Specialty Co., Philadelphia, Pa., has just issued a folder describing and illustrating the bathroom accessories manufactured by this company.

Vapor Heater Booklet.

An eighteen-page booklet entitled "Gorton Single Pipe Vapor Heating System" has just been issued by the Gorton & Lidgerwood Co., New York City. The booklet contains many illustrations and descriptions of the equipment used in this method heating, and shows two layouts of the system.

Tool and Die Catalog.

Catalog No. 20, entitled "Nye Tools," has just been issued by the Nye Tool & Machine Works, Chicago, Ill. The catalog contains eighteen pages, bound in a heavy gray paper cover, and is neatly prepared, with a number of illustrations and descriptions of the products manufactured. The catalog is printed on glazed paper which adds precision to the illustrations.

Water Heater Booklet.

A twenty-six page booklet on gas-fired automatic water heaters has just been issued by the American Heater Corporation, St. Louis, Mo. The booklet is neatly prepared, and contains tables of sizes and capacities, with a page devoted to the proper method of making installations. The cover of the booklet is of gray stock with embossing done in gold. A phantom view of the cover design is reproduced on each page of reading matter and on each page of illustrations.

"Bath a Day" propaganda is as effective in winter as in summer. Keep it up!

Twenty Years Ago in "Domestic Engineering"

Saturday, November 16, 1901.

An Eight-Hour City.—On November 1st, Waterbury, Conn., became an eight-hour city for all the building trades. Less than a year ago Waterbury was a ten-hour town. The strike last summer reduced the working hours to nine. There is no reduction in wages.

Pneumatic Machinery.—The Keystone Boiler and Radiator Company, Huntington, Pa., recently installed pneumatic machinery throughout its plant.

Changes at Uniontown.—The Uniontown, Pa., plant of the Kellogg-Mackay-Cameron Company is undergoing extensive changes and improvements to keep pace with the enormous output. The changes include a new machine shop, foundry and warehouse.

New Pumping Station.—A pumping station, to cost $2,000,000, will be erected near State and 103rd Streets, Chicago, to prevent the recurrence of water famines on the extreme South Side.

Claims Scheme on Part of Union.—It is said that the union plumbers of Spokane, Wash., are taking steps to get the wholesale plumbing supply houses not to sell goods to the master plumbers who are conducting small shops and who will not hire union men.

Company Incorporates.—The Stirling Company has been incorporated in New Jersey, with a capital of $1,875,000, to manufacture water tube boilers.

Well Known Manufacturer Dead.—Edward C. Lewis, aged 75 years, president of the Farrel Foundry and Machine Company, Waterbury, Conn., and with interests in twenty-six manufacturing concerns, died last week.

Workmen's Restaurant.—The new People's Church, now being built near the Bath Iron Works at Bath, Maine, has established a restaurant in the church building. The employes working on the building can get a meal at cost.

Leads the World in Building.—Statistics of building operations in nineteen cities, just published, show that New York, during the first nine months of this year, has had under way building amounting to $3,576,625. Chicago stands second with $2,914,169, while Brooklyn, Pittsburgh and Philadelphia are close up.

Unbeaten Champions.—The unbeaten champions of the New York Plumbing and Steam Supply Bowling League, the John Simmons Company team, has placed two more games to its credit by defeating the Fred Adee & Company team and the Dimmock & Fink Company team.

City Water System.—San Francisco is going to have its own water system, costing $30,000,000, and capable of providing the city with 150,000,000 gallons per day.

Would Form Union.—About twenty of the journeymen plumbers of Davenport, Iowa, met November 8th for the purpose of forming a union.

Delays Pumping Station.—The new sewer pumping station at Galveston, Texas, has been delayed for a very peculiar reason. The building was completed before the machinery was installed. Then a part of the building had to be demolished in order to get the machinery inside. This had to be done not only once but several times.

Franchise Sold.—The sale of the franchise for furnishing steam heat and electric light in the blocks between Third and Fifth and Chestnut and Green Streets, Louisville, Ky., was made to Joseph McWilliams for $17,650. He will immediately put in a plant.

A Handsome Shop.—Fort Wayne, Indiana, is enthusiastic over the new plumbing and heating store of Albert Rolf. A fine display is made in the windows as well as in the showroom.

THE METAL MARKET AND TRADE REPORTS

Steel and Iron.

Steel orders are small and far between and last week the market was interrupted by the unusual number of holidays which took the minds of the business world off the market. The movement for some time, however, had slowed down, though, with no untoward obstacles in the immediate future, demand during the next fortnight should show some improvement. There is no likelihood that it will decrease and prospects are for a steady progress well into December. The charm which speculative buying has in active times is entirely lacking and added to unusual caution during these quiet days, is an eagerness to avoid the incurrence of every obligation which must add to liabilities on the day of reckoning at the close of the year. Every effort is being bent to liquidate present stocks before January 1, and the inventories are expected to be exceptionally light at the opening of the new year.

Small buying in finished steel last week at Pittsburgh was sufficient to maintain fairly steady mill operations, but there is still lacking any considerable tonnage in new orders. Specifications improved in wire and nail supplies and mills report shipments regaining the lost ground that was noted a short time ago. The nail base of $2.90 per keg is being better held at this time, and while it appears quite possible occasionally to place attractive business at $2.75, makers as a rule appear confident of retaining the new base and some look for the $3 base on nails before the end of the year. Small stocks relatively are all that exist in the nail and wire trade, and demand has not reached a near normal volume.

In the sheet and tin plate market some disturbance has been caused by the deep cut in base prices for tin plate from $5.25 per box to $4.75, or $10 a ton. This caused sheet makers to break the fairly steady base of 3 cents for black and 4 cents for galvanized material and return for a time to the 2.75 cents base and 3.75 cents base, respectively. Leading producers, however, are holding to the higher prices as essential for successful operation. Sheet bar prices have become more rigid and will have a stabilizing influence, it is thought, in new sheet operations.

Great hopes are now centered on foreign trade, from which the American steel industry has been barred to a great extent during the entire year. The markets outside the United States have been purged much in the same way as they have been here and their absorbing powers will be measurably greater, so that by the time American exporters are in position to meet European competition they will find a good field open. Already there has been some improvement in the number and volume of the orders placed even in the present month. Price readjustments are due to come with a reduction in manufacturing and overhead costs, but business may be more or less irregular during the process of transition.

There is little to note in the position of pig iron. The market continues to be uniformly quiet in all producing centers. It is as quiet, in fact, as any period for years; in July last the point of extreme depression was reached. The present situation, though disappointing, has not been altogether unexpected. Several circumstances have combined to cause it. In the first place a buying movement started last month without the ultimate demand behind it. It was induced by the fear of interruption to shipments by a railroad strike. Consumers provided for contingencies which failed to materialize and left them comfortably supplied. In the second place, foundry business has fallen off, and finally there is a general disposition to wait and to buy as sparingly as possible with a view of reduction in inventories to a minimum as the close of the year approaches. In addition to this, buyers have felt that a reduction in production costs, consequent to a lower freight rate schedule, would protect them against any possible advance in prices, so that nothing would be gained and something might be lost by anticipating requirements. How far this expectation is justified is a matter of doubt. The furnaces claim to have been selling at a net loss per ton for months, and they look forward to a lower production cost to reimburse them and they are likely to resist a price reduction, especially if any appreciable demand should materialize.

Prices for pig iron are quoted as follows:

No. 2 Pittsburgh	$22.96@$23.46
No. 2X Philadelphia	22.84@ 23.54
No. 2 Southern Birmingham	19.00@ 19.50
No. 2 Chicago	21.00@ 21.50
Basic Valley, furnace	19.00@ 19.50
Bessemer, Pittsburgh	21.96@ 22.46

Copper.

The tone of the copper market is more cheerful than it has been for weeks. Demand has shown a steady improvement. It has been a struggle between the consumer and the seller, in which the latter has eventually won out. As soon as it was realized that the producers were unyielding the buyers surrendered and paid the advanced prices. There is very little call for prompt metal and some holders of limited quantities might be found willing to shade, but the price of December and November copper is now resting secure on a minimum basis of 13¼ cents.

Tin.

The interruption to business consequent to the holidays last week was not conducive to activity. The market for tin has been quiet under irregular demand which has been almost entirely confined to speculative trading between dealers. At the close of the week the market was firmer in sympathy with London. For Straits sellers asked 28⅝ cents to 29 cents, as to position, the lower figure applying to spot and nearby. Arrivals during November so far have been 525 tons at Atlantic ports and 5 tons at Pacific. Tin afloat is estimated at 4,449 tons.

Lead.

The movement of lead continues slow and somewhat irregular and the tone of the market easy, but prices are without quotable change. For New York delivery both the principal producers and the independents continue their quotation at 4.70 cents. Lead has been selling on the East St. Louis basis, however, of 4.35 cents, which represented the market at the close on Saturday.

Zinc.

The tone of the market is strong under good demand from galvanizers and brass founders. The price at the end of the week was unchanged from Thursday's at 4.70 and 4.75 cents East St. Louis, as to sellers and positions.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum Powder .....60 to 65 cents per lb.
Aluminum (in 50-ton lots) 99% and purer..25 cents per lb.
Antimony (Chinese and Japanese).....4.55 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	10½ to 10⅝ cents	11⅝ cents
Copper, light	8⅝ to 8⅞ cents	9⅞ cents
Brass, heavy	4¾ to 5 cents	6 cents
Tea lead	2½ to 2¾ cents	3¼ cents
Lead, heavy	3⅜ to 3⅝ cents	4¼ cents
Crucible copper	10¼ to 10¾ cents	11¾ cents
Solder joints	5½ to 6 cents	7 cents
Zinc	2½ to 3 cents	4 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying	Selling
Heavy yellow brass	5 to 5½ cents	6½ cents
Brass, light	4 to 4½ cents	5½ cents
Red brass	7½ to 8 cents	9 cents
Copper, heavy	9 to 9½ cents	10½ cents
Copper, light	7 to 7½ cents	8½ cents
Lead, heavy	3 to 3⅛ cents	3½ cents
Zinc	2 to 2½ cents	3½ cents

In the New York Plumbing Supply Market.

New York, N. Y., November 14.—The outstanding feature in the plumbing supply market this week is a tendency to restrict buying in order to have stocks at the lowest possible level when the inventories are taken shortly. This of course is quite a normal development, occurring every year about this time.

Otherwise, conditions are much as they were reported last week. The demand for iron pipe continues fairly good and prices in this line are being well maintained. Soil pipe continues rather dull, most of the regular fall demand having been met; but of course there is always the possibility that an open winter may revive conditions all around. The call for general plumbing goods is variable, according to the locality: good in the suburban areas, such as the Bronx and Brooklyn and Queen's, where there is an unprecedented amount of building in hand, and not at all good in the districts where business is more or less confined to office buildings and industrial sites, where there is not much doing.

There is a good call for bathroom equipment but, as previously reported, this is mainly in the cheaper grades to match the quality of the home building that is proceeding in the suburban areas.

The demand for heating equipment continues good, and this tendency is heightened by the energetic methods of one of the companies concerned who are out with well-planned advertising campaigns designed to catch some of the Christmas gift trade for dealers in heating equipment.

There is a belief in some quarters that there will be a general price decline in the near future, due to the absence of buying on any extensive scale, for the reason quoted in the first paragraph of this report. Another factor that may react in this direction is the anticipated reduction in railroad freight rates, and this is looming more strongly within the last few days by the announcement of another wage cut planned by leading lines all over the country.

The demand for iron pipe reported elsewhere in this report must be taken as applying almost entirely to the suburban home building boom. Among those firms which cater for business in new offices and industrial sites the competition is so keen that "whether the call be for 1 ft. or ten thousand ft.," as one man expressed it, "the whole crowd are right after it and the price is cut to the bone."

Among the houses catering for suburban business, the contrary is the case, prices, as already reported, being well maintained and the demand fairly good.

"The best I can say this week," said the manager of The Reading Iron Company, "is that we've had a good October. We are not doing quite so well in November and we don't expect to do so. Even in normal times there is a certain amount of stagnation at this period."

In the absence of Manager F. W. Broatch, of the U. S. Sanitary Mfg. Company, his assistant reported that prices for bathroom equipment were being well maintained. "There may be a drop next month, but that is quite normal and doesn't mean anything. The demand is excellent but of course it is almost entirely in connection with the home-building program in the suburbs."

"We've maintained all our price advances," said Publicity Manager Noonan of the American Radiator Company, "and the demand is increasing. This of course is the season when householders overhaul their heating equipment and in some cases make new and more efficient installations. We certainly have not anything to complain about."

"Nothing spectacular, but a steady improvement all round," said President H. H. Beals of the Biddle Purchasing Company. "We see this improvement in other trades as well as our own and we have nothing but optimism for the outlook. By springtime conditions should be in good shape everywhere and people in our line will, like all the rest of them, both give and get prosperity."

Reviewing the situation in general there is a general feeling of optimism, even in those districts where at present business is not very active. The concensus appears to be that spring will see the plumbing supply trade well on the way towards its former prosperity, although just now, in some quarters at any rate, there is a tendency to mark time rather than progress.

By that time the anticipated reduction in freight rates will probably be effective and, even more important, something will be set moving towards catching up with the office and industrial building program, which has been practically stationary for some years past. In that factor alone it is pointed out there are tremendous possibilities of prosperity.

The Chicago Plumbing and Heating Supply Market.

Chicago, November 16.—"Business in Chicago and surrounding territories is showing some improvement," said a jobber of plumbing and heating supplies. "We have been doing a good business for quite a little while now, and look forward for just as much business for some time to come. The increase in building operations has had a great deal to do with the picking-up process, and no doubt building will continue strong, at least it looks that way right now."

A representative of a large pipe manufacturing concern also reported business good. Oil country work is picking up at this time due to the opening of new fields and to extensions to others. "At the present time," he said, "business is picking up, with inquiries coming in, but we cannot predict what the future will bring."

"Business seems to be coming along pretty good," said a manufacturer's representative. "Of course we have to hustle about getting it, but we get it just the same, which is indeed encouraging. There have been no price changes in any of our lines for quite a while now, and we do not expect any further advances or reductions for some time. However, we cannot predict what will take place in regard to this, as it appears that the products we handle have gotten down to about as low a level as can be expected at this time. Inquiries continue to come in, which give us further reason to believe that business will not lag very much if it lags any at all."

Norwich, Conn.—J. R. Fitzgerald has the contract to install plumbing and heating in a $20,000 residence with garage, which is to be erected on Washington Street.

Exchanging Ideas is the Foundation of Progress

What Associations Are Doing

Through United Effort the Individual Succeeds

Interesting Discussions on Ozone, and the Announcement of a Hot Water Layout Contest Feature the November Meeting of the Illinois Chapter, A. S. H. V. E.

Ozone was the subject for discussion at the November meeting of the Illinois Chapter of the American Society of Heating and Ventilating Engineers, held at the Engineers' Club, Chicago, Monday evening, November 14. Dr. E. Vernon Hill, former president of the Illinois Chapter and the parent body, was the speaker of the evening.

Following dinner, which was served in the grill room of the club at 6 o'clock, James H. Davis, chairman of the meeting and one of the founders of the Illinois Chapter, spoke briefly on methods of heating during the past forty years. When he started in business in 1878 there were no set rules for determining the amount of radiation needed in a room, while estimating, he said, "was a joke." Gradually, however, the business came to a point where exact rules were necessary if further progress was to be made. Along with this progress there came a necessity for accurate methods of finding costs, and these, likewise, were worked out and thoroughly analyzed, until today there is almost complete exactness in every department of the business.

Taking up the discussion of ozone following Mr. Davis' outline of the history of heating, Dr. Hill first gave his definition of the substance. "Ozone," he said, "is a baffling, mysterious substance about which much has been written, but about which little is really known. It exists in the pure country air, at the sea shore and in the mountain regions—in fact wherever nature is at its best ozone is found."

Tests are now being made in one of Chicago's newest schools to determine whether or not ozone is successful in ventilation work. These tests show that ninety per cent of the air can be re-circulated and that fifty per cent of coal ordinarily used can be saved. As an instance of the practicability of ozone for ventilating, Dr. Hill pointed out that during the influenza epidemic three years ago, employes in the underground tubes in London, where ozone is used, were not affected. Ozone concentration is being given considerable attention in the tests being made. Some authorities on the subject seem to vary in the amount of ozone which should be injected into the air for purification and yet be desirable for the people occupying the room, but it is Dr. Hill's contention that 1/100 part of ozone to 1,000,000 parts of air is most suitable for school ventilation work. In the early days when experiments with this substance were being made, many of those who had taken an active interest in it declared ozone to be a poisonous gas that should be prohibited by law if no other action could bring about its eradication. However, this opinion is gradually being changed, and it is expected it will not be long before ozone will be in general use in ventilating systems.

Stereopticon slides were used to illustrate points brought out in connection with the work of the ozone making machine. A demonstration of the manner in which the machine works was also given. The machine was allowed to run until those in the rear of the room noticed the effect or could detect the ozone in the air. Too much ozone in the air is detrimental, Dr. Hill pointed out by the use of a chart which he prepared. This chart showed what a given amount of ozone will do under certain conditions, while another chart revealed that there is 1/1,000,000 part of ozone in pure country air. Ozone is not injurious if used in low concentration. It is declared to be highly beneficial to the health and increases weight.

E. S. Hallett of St. Louis, Mo., who is making tests in schools in that city, reports a considerable reduction in fuel consumption since the ozone equipment was installed three years ago. He also reports that enrollment in the schools having ozone equipment has been greatly augmented.

Dr. Hill's talk on the subject was well received and caused considerable discussion on the part of the members.

Secretary H. G. Thomas announced at the meeting that a hot water layout competition had been started by the Chapter. The Board of Governors has prepared plans from which the members, who alone are eligible to enter the contest, are to make heating layouts. Judges will be appointed to select the best layout, and the rules of the contest will also govern the selection of the winner. All layouts must be made in blue print form and must have three pages of specifications attached. The contest will close with the January meeting, Jan. 9, 1922. Three prizes will be offered, the first will be $50, the second $30, and the third $20.

A motion was made at the meeting that a committee be appointed to prepare a letter of condolence to the widow of the late J. P. Dugger. This was unanimously concurred in by the members.

Seven new members were taken into the Chapter, making a total of 138 members. They are:

Louis F. Nordine, M. G. Harbula, F. R. Crane, Jr., George A. Banta, C. F. Geiger, M. S. Good, and Byron L. Casey.

Cincinnati Master Plumbers Elect Officers

W. C. Tillett.

W. C. Tillett is to guide the destinies of the Cincinnati Master Plumbers' Association during the coming year, having been chosen president of the association at the annual election on November 5th by a unanimous vote. Mr. Tillett is the youngest president the association has had in forty years. Other officers elected are: John Doherty, vice-president; William Helmer, secretary; Benjamin Laumann, treasurer; James Gibson, sergeant-at-arms; directors: F. H. Smith, Edward Kleine, James Doyle, Henry Schwartz, Frank Beaumont, George Young, John Crotty and Robert Sleight. The annual election was held in conjunction with a dinner at the Odd Fellows' Temple. Edward H. Morgan, retiring president, was presented with a gold watch by Simeon Kaufman on behalf of the organization.

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CHICAGO HEIGHTS, ILLINOIS

Manufacturers of

Economy Boiler Seal
For making permanent repairs on cracked, leaky boilers. Saves buying new sections.

Economy Radiator Compound

Economy Scale Solvent
For automobile radiators and water jackets.

Economy Scale Remover
For removing scale from boilers.

Economy Soot Destroyer

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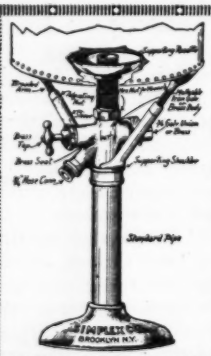

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Made in Malleable Iron or Brass

Stronger, gives larger circulating opening than cast iron stands.

Will carry twenty sizes of boilers. Supporting arms easily attached to all sizes.

Adjustable to any height.

The SIMPLEX costs less in labor, saves leaks—no place for dust or vermin to collect.

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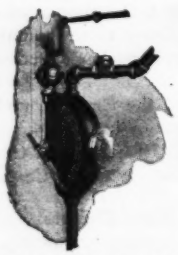

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WILEY SAFETY VENT VAPOR REGULATOR

Provides the best

LIFE AND ACCIDENT INSURANCE for your vapor heating boiler

A peerless quality product manufactured and sold exclusively by

The Simplex Heating Specialty Co., Inc.
Lynchburg, Va.

Saves Labor and Expense

When you need to remove a defective length of pipe or cracked fitting, or connect up new fixtures to an old line, the easiest and best method is to use the

SISSON Insertable Joint

Not necessary to disturb pipe above or below. No danger of cracked joints.

Write for Catalog telling all about it.

R. ESTABROOK'S SONS
1st and C S treets, South Boston, Mass.

November 30 and December 1, 2 and 3, 1921.—The twelfth annual convention of the National Association of Practical Refrigerating Engineers, at the Hotel Lorraine, Philadelphia, Pa.

January 24, 25 and 26, 1922.—The twenty-eighth annual meeting of the American Society of Heating and Ventilating Engineers, to be held in the Engineering Society's building, 29 West Thirty-ninth Street, New York City.

January 24, 25 and 26, 1922.—The annual convention of the Illinois Master Plumbers' Association, at Champaign, Ill.

February 14, 15 and 16, 1921.—The annual convention of the Ohio State Association of Master Plumbers, at Canton, Ohio.

March 7, 8 and 9, 1922.—The annual convention of the State Association of Master Plumbers in North Dakota, at Grand Forks.

March 13, 14 and 15, 1922.—The annual convention of the Indiana Society of Sanitary Engineers to be held at Indianapolis.

March 27 and 28, 1922.—The annual convention of the Kansas Master Plumbers' Association, at Salina, Kansas.

Board of Directors of N. A. M. P. to Meet in Chicago, December 2, 1921.

The Board of Directors of the National Association of Master Plumbers will hold a meeting in Chicago on Friday, December 2nd. The meeting will be held at the Congress Hotel, according to the official notice just issued by Executive Clerk J. W. Cannon, Jr.

Illinois Master Plumbers to Meet at Champaign.

The Illinois Master Plumbers' Association will hold its next annual convention at Champaign, Illinois, on Tuesday, Wednesday and Thursday, January 24, 25 and 26, 1922, according to official notice just received from Secretary W. C. Haviland, of Aurora, Ill.

Arthur H. Lyman.

Arthur H. Lyman, who was engaged in the plumbing and heating business in Athol, Mass., for many years, died at his home in that city on November 5. He was born in Northfield, Mass., and 35 years ago settled in Athol and established a plumbing business. He conducted the business for many years and then transferred his attention to real estate and insurance.

Joseph McGilvray.

Joseph McGilvray, a master plumber of Lynn, Mass., died on November 3, at his home in that city, in his 59th year. His place of business during all these years since he started in for himself in 1886, had been located in the old West Lynn Hotel building in Market Square. He continued in business until within four weeks of his death when illness overtook him. Mr. McGilvray was a native of Rockport, Mass., but had lived in Lynn most of his life. He served his apprenticeship in the plumbing business in a Lynn shop.

Illinois

Chicago.

Baldwin & Glasson, 208 North Wells Street, have secured the contract to install heating systems in the $150,000, three-story apartment building to be erected at 1374-1382 Greenleaf Avenue for Charles Regler, and in the $100,000, two-story residence with garage to be erected at Winnetka Avenue and Lorush Street, Winnetka, Ill., for J. G. Kellogg. The apartment building will contain living quarters for twenty-eight families and will be 100x173 ft. M. J. Corboy & Co., 178 West Randolph Street, have the plumbing contract on the latter structure.

G. Albin Nilson, 155 North Clark Street, has the contract to install plumbing in the $200,000 Evangelical Lutheran church to be erected at Glenwood Avenue and Elmdale Street. The structure will be two stories, 150x150 ft.

William P. Arnold, 2345 West Roosevelt Road, and Harry Peckham, Jr., also of 2345 West Roosevelt Road, will install the plumbing and heating, respectively, in the $40,000, two-story factory building to be erected at 2606 North Cicero Avenue for the Pennock Millwork Co.

The United Plumbing & Heating Co., 3012 West Roosevelt Road, has been awarded the heating contract on the six-family flat building to be erected at 3741-3743 Granshaw Street, at a cost of $50,000. The building will be three stories, 38x66 ft.

Morris Cole, 1946 West Division Street, has the plumbing contract on the $30,000, public garage building under construction on Loomis Street near Adams Street, for J. F. Dooley. N. B. Brown Co., 19 South LaSalle Street, will install the heating system.

Noble & Thumm, 2313 Lincoln Avenue, will install plumbing and heating systems in the $25,000, two-story residence being erected on Judson Avenue in Evanston, Ill., for J. T. Wheeler.

Peter K. Clayton, 1949 North Western Avenue, has the contract to install plumbing in the new forge shop of the U. S. Ball Bearing Co., being erected at 4535 Palmer Street, at a cost of $40,000.

Lewis Nelson, 3521 Fullerton Avenue, will install plumbing in a $22,000 store and flat building to be erected at 3845 Fullerton Avenue, for J. Weiss.

Samuel Kersten, 554 West Jackson Boulevard, and Gallaher & Speck, 215 West Congress Street, will install plumbing and heating, respectively, in the store and loft building now under construction at Randolph Street and Garland Court.

A "Citizens' Committee to Enforce the Landis Award" has been formed in Chicago. This committee, which is composed of 160 of the city's leading business men in the various lines, has undertaken the task of "cleaning up Chicago's building industry." The policy of the committee, which has already been adopted, calls for full support for all unions and builders who abide by the Landis award, to establish "open shop" in all crafts which disregard the award, and to give no support to contractors who refuse to operate under the Landis award.

Other Cities in the Sate.

The Farrell Heating & Plumbing Co., Aurora, has the plumbing and heating contracts on the $14,000, two-story residence which is to be erected in that city for W. C. Heise.

Brooks & Martin, Hillsboro, will install the plumbing in the $80,000 community high school soon, which is to be built in Raymond, Ill.

The Patterson-Stewart Co., Springfield, has the contract to install plumbing and heating in the $50,000 addition to the First Methodist Episcopal church in that city.

TESTITE

Closet Connection

As its name implies—it stands the test

Particular Plumbers

who desire to make a closet connection consistent with the other joints in the drainage system of a building, are using TESTITE Closet Connections.

A Positive Connection Every Time

Much of the foul odor from bath and toilet rooms is due to defective closet connections. Many plumbers take great care in installing the piping of a drainage system and then set a closet bowl in putty or cement or other non-dependable, plastic substances.

Our TESTITE Closet Connection for short or long horn closet bowls is the missing link between the drainage system and the fixture. Three to four hours' time is saved on each closet bowl, plus solder, nipples, caps, test plugs, and the assurance of a perfect connection.

Write for further particulars, with liberal trade discounts.

The Groeniger Mfg. Co.

8 E. Chestnut, Columbus, Ohio

PLENTY OF

HOT WATER

NO EXTRA EXPENSE

The most approved and economical method of heating water for domestic purposes. An abundant supply of hot water at just the right temperature, 24 hours a day, at practically no extra cost. Easily connected to outside of steam, vapor or hot water boiler; does away with fuel-wasting coil in fire pot. Uses surplus heat of boiler. Does not overheat or underheat. Will not burn out, once installed.

An unusual opportunity for live dealers. Order now and be prepared for the demand being created. We furnish cooperation and practical sales helps to give you full benefit of our national advertising. Write for full details.

The Hotstream Heater Co.

"Makers of Heaters that Heat"

Cleveland, Ohio

The Hotstream

We also make a complete line of Gas and Kerosene Water Heaters.

INDIRECT WATER HEATER

Wash and Bathe in Running Water

The Shower for Schools and Institutions

Has Lock Shield Controlling Stops that keep the water at the economy point

This Lock Shield Control feature of the Speakman H-895 Shower is appreciated by everyone interested in school maintenance. It saves water. This is a big item especially when you consider the cost of heating water.

Lock Shield Controlling Stops also allow the water to be turned off any one shower in the room without interfering with the operation of the other showers or fixtures.

Other features of the H-895 Institutional Shower that insure water economy are the Mixometer—exposed type all metal—that gives the desired shower temperature instantly, no wasted water, and the Anyforce Head, in which each hole is drilled separately, at an angle, so that all the healthful invigorating spray strikes the bather—none wasted around him.

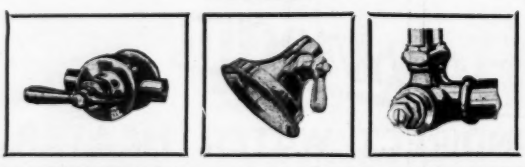
We have a folder showing this H-895 Institutional Shower. We'll imprint your name on a quantity if you want—also furnish a lantern slide showing the same shower. Other lantern slides which we will furnish free show the H-952½, H-965 and Portable Showers.

Let us know if you want any of these.

Speakman Company, Wilmington, Del.

SPEAKMAN SHOWERS

Shower over every bath-tub



New York

New York and Vicinity.

"One of the most encouraging signs of the times," said Charles W. Kirchoff, president of the Bronx Association of Master Plumbers, New York, to a representative of "Domestic Engineering," "is the improved quality of the plumbing supplies we are getting.

"This improvement is not limited to one or two lines but appears to be general and is so marked that it is having a most beneficial effect all round. The plumber feels he is handling material that will do him credit and he insensibly matches his own work with the high quality of the material. The property owner or householder is equally satisfied when he finds out, as he surely will, that the equipment now being put in will last much longer than has been the case in recent years.

"Look at this valve," continued Mr. Kirchoff; "note the fine grade of brass used, the big waterway, the excellent finish in every respect. That costs us 79 cents, whereas during the war we had to pay $1.50 for an article of lower quality.

"That is one of the reasons why we feel so confident as to the future. Prices are down, the decks are cleared in every way for full-speed ahead, and now, as you see, at the same time as we are reducing costs we are increasing the quality of what we offer. That pleases us more than anything because it shows that the manufacturers are as keen to get the country back to prosperity as we are ourselves."

Mr. Kirchoff had also some interesting views to express on the possibilities of business among the small home-builders.

"There's plenty of business to be had there," he said, "but there are certain factors in it that need to be watched. A plumber, if he isn't careful, is just as liable to lose money as to make it.

"Take the case of a man who invests his life-savings—maybe two or three thousand dollars—in building a home for his old age. Just a small-scale affair, of course. By the time he's got through with the realty man and the builder, he's beginning to be scared as to whether his money will last through the job, and the plumber is apt to get a skimped order that won't be any credit to him or any satisfaction to the householder.

"There are a number of newly established contracting firms whose members have only recently emerged from the journeyman class and naturally haven't had much experience in estimating. They quote prices that are decidedly attractive to the equally inexperienced householder but which the more experienced plumbers know quite well can only lead to disaster. The end of it is, in these cases, that the householder gets a bad job and feels sore against the whole plumbing fraternity—most unjustly so—and the plumber is more than liable to lose money on the contract and in some cases he goes broke altogether.

"I'm handling a job in this type of dwelling, at the present time, but I got it at a fair price and I'm secured for my payments by a mortgage on the property. That sets me right and it encourages me to give my customer a good job all round. This practice has been followed by the builder, and there is no reason why the plumber should not protect himself in the same way."

The Austin Engineering Co., 121 W. 42nd Street, doesn't find business dull. Manager T. C. Maguire reports that his organization is just about as busy as it can be and in this connection there is a point to be noted. Many heating and ventilating contractors will not touch what are called public works, such as schools, etc., because payments are sometimes delayed. On the other hand, where a firm can

finance this class of business, it pays well. The Austin Company can quote an impressive list of present or past contracts, and these have carried them right through the dull period without a break. Among the works mentioned by Manager Maguire are schools at Bay Shore, Lynbrook, Teaneck, N. J., Patterson, N. J., Bayonne, N. J., theatres at Montclair and Brooklyn, a large private residence at Memphis, Tenn., Nurses' Home (Kings County Hospital) Jewish Center at Brooklyn, Brooklyn Hebrew Home, Trust and Insurance buildings at Hartford, Conn., etc. "There's plenty of business but one has to go after it," said Mr. Maguire; "I figure that we get about one in ten of the contracts we bid for, but we keep plugging away. Recently we submitted bids for some work in New Mexico, and I hear there were only eight bids from the whole of the United States!"

Wells & Newton have the plumbing contract on the new First National Bank at Detroit, but report that there is not much doing in New York City. Manager Brown hopes to see a revival in the spring on a worth-while basis.

Massachusetts

Boston and Vicinity.

Bids have been received for a new junior high school building for the city of Newton the construction of which will cost in the neighborhood of $300,000. Edward C. Kelly, of Boston, was the low bidder for the plumbing at $12,103 and the W. H. Welch Co., of Boston, for the heating contract at $42,838.

The W. H. Welch Co., of Boston, has also been awarded the contract for installing a heating system in the Samuel Adams Schoolhouse for the city of Boston.

A new heating plant for the city hall building at Brockton is being considered by the board of aldermen. Its installation has been recommended by the superintendent of public buildings, Ralph P. Jackson.

Faneuil Hall, Boston, the Cradle of Liberty, which has been unheated recently is soon to have a heating system installed. The city council has provided an appropriation of $6,500, of which $5,000 will be expended for running steam pipes to the building from the India Building on State Street and the remainder to defray the cost of the heat for this winter.

T. A. Ridder & Co., of Boston, have the contract for installing heating in an addition to the Cambridge factory of the Mack Motor Truck Company.

James S. Cassedy, former president of the National Association of Master Plumbers, has been re-elected as a member of the school board of his home city of Cambridge. Mr. Cassedy was one of the high men among the several candidates for places on the board.

Unveil Tablet of Crane Co. Men Who Served in World War.

A bronze tablet bearing the names of the employes of the Boston branch of the Crane Company who served in the World War was unveiled on Armistice Day, with appropriate exercises. The tablet, 30x24 inches, is set in the marble wall just inside the main entrance of the company's Boston headquarters at 48 West First Street, South Boston. J. E. Slattery, the Boston manager, presided at the exercises and the unveiling was done by W. A. Mann, the assistant manager. An address by President R. T. Crane, Jr., was read by Manager Slattery as part of the program. The names on the tablet are: Solomon Franklin Bell, Benjamin L. Bergman, Wellington P. Binns, Leo E. Buckley, James B. Vasey, James F. Coffey, Dennis F. Coleman, Joseph G. Curtis, Timothy Donovan, Philip M. Dowd, Ernest D. Glass, Vincent J. Looney, George W. McDonald, Giles Mosher, James B. O'Neil, Frank W. Peterson, Stephen F. Sullivan, Robert Wallace and A. Walsh.

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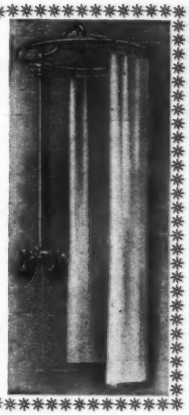

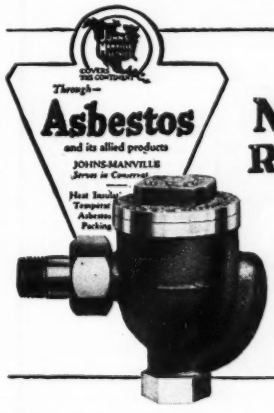

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The Frost Manufacturing Co.
Kenosha, Wisconsin, U. S. A.

Other Cities in the State.

The department of charities of the city of Springfield has advertised for bids for heating and plumbing for an addition to the children's ward at the city almshouse.

The plumbing business of Taylor & Percival, one of the oldest concerns in Waltham, has been sold to William Stokes, formerly for 20 years an employe of the firm. The new owner plans to continue at the present location on Moody Street. The firm of Taylor & Percival was established 38 years ago. Mr. Stokes resigned a few years ago to go into business for himself.

Rhode Island

Providence.

Joseph Appleton, 1827 Westminster Street, has the contract for installing plumbing in the new X-ray department at St. Joseph's Hospital. He also has the contract for remodeling the plumbing in the Nurses' Home at the same institution.

Architect Harry Marshak, Strand Theater Building, has completed plans for a modern apartment house to be erected at Prospect and Halsey streets. The structure will have two apartments of nine rooms each.

Plans for the new Providence high school have been completed and work has commenced. The sum of $1,300,000 has been appropriated for this building, which will be three stories high and contain fifty classrooms. The structure will measure 231 ft. on Pond Street, 190 ft. on Winter Street, and will have an assembly wing on Montcalm Court, 80 by 118 ft. The central heating plant will be built later and provisions have been made for a future wing to be erected on Spring Street.

William H. Spaulding, of Saylesville, has the contract to install plumbing and heating in a two-family house for F. E. McGowan on Hunts Avenue, a three-story house on Smithfield Avenue for William Hodgkiss, and a two-family house on Beachwood Avenue.

Several new buildings are to be built at the State Infirmary at Howard. Lowest bids for general construction, plumbing, heating and wiring have been received, but are nearly $100,000 in excess of the amount appropriated. A meeting is to be held to consider the situation.

New Jersey

Trade Extension in New Jersey

The National Trade Extension Bureau held three meetings in New Jersey during the week of October 31st to November 6th. The first meeting was held in Jersey City on Monday evening, October 31st, at the Public Service Hall. President Richard Entwistle presided. Daniel L. Hanson, New England representative of the Bureau, took up the various phases of the plumbing and heating industry, comparing it with other industries both in possibilities and results accomplished. He particularly stressed the idea of using the word "service" on bills, instead of labor, making clear that labor is only part of the service rendered the customer when a mechanic is sent out. Other matters discussed being business management, prestige, also the cost of overhead. The meeting ended with an animated discussion of matters on selling and advertising.

The second meeting was held in the Grand Moose Hall, Newark, Wednesday evening, November 2nd. Nearly one hundred were present, among them representatives of several supply houses. Charles Kolb of the Educational Com-

mittee presided. A discussion lasting until midnight ended this meeting.

The third meeting was held in Trenton, in the Recreation Room of the Thomas Maddock's Sons Co.'s plant. Archie M. Maddock presided, giving a preliminary talk along the lines of what the Bureau stood for and what it really is, namely a Clearing House of Ideas coming from the trade all over the country and being sent out to plumbing and heating contractors throughout the country.

Daniel L. Hanson, the speaker of the evening, took up the question of three costs, three partners and three profits which should pertain to every plumbing and heating contracting business. By means of charts he compared the plumbing and heating industry with various others, showing that the handicaps which had retarded its greater growth were entirely inherent in the industry, due to lack of advertising, lack of sales methods and lack of "nerve."

The meeting lasted well towards midnight, the discussion being animated on the part of the supply trade as well as of the local contractors.

Florida

Building permits issued in Jacksonville during the month of October amounted in value to $330,000. Permits issued in Tampa for the same month were valued at $417,428.70, while for the first ten months of the year permits issued in Tampa amounted to $3,591,144.70. In St. Petersburg, building valued at $414,450 were issued during October, with the total value of permits issued during the first ten months of the year placed at $3,904,145.

The floating of a bond issue of $75,000 for the construction of school houses and for a sewerage system has been authorized by the citizens of Iverness.

Gadsden County has authorized the construction of a $75,000 school building in Quincy.

A business building to cost approximately $15,000 is soon to be constructed in Daytona, for J. T. Nelson.

Seventy thousand dollars is to be spent by the city of West Palm Beach for the extension of the city sewer system. This improvement will reach many districts now without sewers and will thus enable home owners to have plumbing systems installed.

E. G. Golder, Jacksonville, has been awarded the contract to install plumbing in the buildings at the fair grounds in Brentwood, near Jacksonville.

Bids are being received by the Masonic fraternity in Live Oak for the construction of a $40,000 temple in that city. Construction work will start about December 1st.

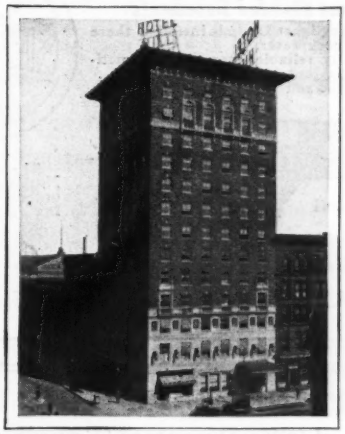
A theatre to cost approximately $50,000 will be constructed in Bradentown, for C. A. Browne. The structure will have seating capacity for 1,000 people. An apartment building to cost $80,000 is also to be constructed in Bradentown, by George Wallace.

Henry T. Diehl, Tallahassee, has secured the heating contract on the $168,000 addition to the Florida State College for Women, to be erected by the State Board of Control in that city.

Bonds amounting to $150,000 have been voted by citizens of Orange County, for the construction of a county court house in Orlando.

Three residences, to cost $50,000 each, are soon to be erected at Mountain Lake, near Lake Wales, Polk County.

Building permits issued in Key West during October were valued at $54,155. Last month Clearwater issued building permits valued at $65,000. For the first half of October, Orlando issued permits valued at $84,000, while in the last 60 days West Palm Beach issued permits valued at $500,000.



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One hundred and twenty-nine Kohler "Viceroy" Built-in Baths grace the bathrooms of the Hotel Hill, Omaha, as they do in so many other hotels of the first class. For the recognition of the fine qualities of Kohler Enameled Plumbing Ware is national in scope, and extends, with its use, into homes, hotels, clubs, apartments, public institutions—wherever more than ordinary discrimination is used in the selection of plumbing ware. Beauty, durability, utility: upon these qualities Kohler Enameled Plumbing Ware bases its preëminence.

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The national prestige of Kohler Enameled PlumbingWare, as demonstrated by numerous important installations advertised, reflects favorably upon Kohler dealers everywhere and gives them an added sales advantage.

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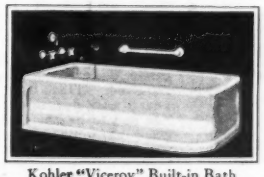

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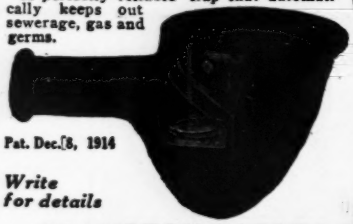

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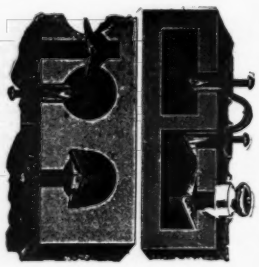

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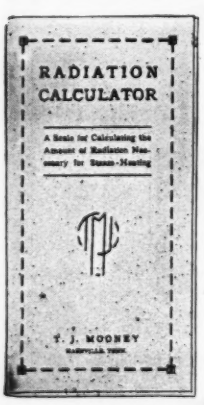

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Kentucky

Louisville.

The school bond issue voted upon November 8, went over easily, and will result in some municipal work getting underway probably in the spring, if the bonds can be disposed of.

George Schardein, of F. S. Schardein & Sons, was elected a member of the Board of Park Commissioners, Louisville, in the November election on November 8. Mr. Schardein has been a member of the General Council, as an alderman, during 1920 and 1921.

James Herin has good contracts on the new residences of Dr. G. Fulton, 1532 Castlewood; and A. E. Norman, Jr., at 1536 Castlewood, each contract calling for 5 closets, 3 baths and 5 lavatories, etc. These residences will cost more than $25,000 each.

John M. Wilbers & Son, have the contract on new offices for the German Washington Fire Insurance Co., 807 East Broadway, where a remodeling job calls for installation of a large number of fixtures.

The Laib Co. reports that it has just unloaded the largest shipment of pipe ever received in Louisville. The shipment came by barge lines down the Ohio from the Pittsburgh district.

California

San Francisco and Vicinity.

Ground is being broken on the campus of the University of California, Berkeley, for the $150,000 Students' Union Building. The Turner Co., San Francisco, was awarded the plumbing contract on a bid of $11,100, and W. F. Wilson secured the heating contract at $5,817.

Andrew Holle, a well-known plumber of San Francisco, who has not been actively engaged in business for a few years, has returned to contract work, and he has just secured the contract for the plumbing on the new Crocker-Amazon school at a bid of $5,485. Mr. Holle also has plumbing contracts on a number of fine residences in the Westwood Park district.

The C. Peterson Co., San Francisco, has been awarded the plumbing contract, at $12,000, on the new six-story apartment house, known as the Beck Apartments, located at Powell and Bush Streets.

The J. E. O'Mara Co. has the plumbing contract on a first-class new apartment house at Larkin and Geary Streets. at $10,000.

Thomas Skelly has the plumbing contract for the new office building at Sutter and near Stockton Street, at a figure of $3,000.

Los Angeles.

Los Angeles is to have a large new hotel, to be erected near Fifth and Olive streets on the site of St. Paul's Cathedral, which has been sold to a local syndicate. The lots have a frontage of 360 ft. on Olive Street and 200 ft. on Fifth Street. According to plans, which have been prepared by Architects Schultz & Weaver, of New York, it will exceed in size and beauty any hotel on the Coast.

The building is to be a twelve-story structure of Spanish Renaissance style of architecture, and will contain one thousand rooms. It is to be called The Biltmore, and will cost $7,000,000.

Preliminary plans are being prepared for a three-story brick hotel building, 60x110 ft., to be erected on East Seventh Street. Three store rooms will occupy the first floor.

A bungalow court, for which the firm of Ahrens & Sun-

day is preparing plans, is to be built on Kingsley Drive for G. H. Bloom. The structure will contain ten units of five rooms each. Another bungalow court to be built in the Wilshire district on Serrano Street near Sunset Boulevard will cost $30,000. It will consist of ten four-room bungalows.

Architects Walker & Eisen, Pacific Finance Building, are preparing plans for a one-story brick bank and store building to be erected at Washington Street and Vermont Avenue for the California Bank. The building will contain banking room, twelve stores and garage, and will be 130x153 ft.

Los Angeles High School on Rimpau Boulevard is to have a gymnasium which will cost about $110,000.

Plans are being prepared for a ten-story and basement, class A building on Olive Street, between Seventh and Eighth streets, for James H. Adams. It will be occupied by the Southern California Telephone Company and will adjoin its present building. It is to be 100x150 ft.

A two-story brick store and apartment building is to be erected on Western Avenue, between Santa Monica Boulevard and Hollywood Boulevard, and will contain three stores and six apartments.

Los Angeles is to have a consolidated county and city jail, the city council having indorsed the plan of the county board of supervisors to construct a $2,250,000 jail building. A committee of four councilmen were appointed to confer with county officials and agree upon plans. A receiving hospital and police court is to be included in the building.

Architects Morgan, Walls & Morgan are preparing plans for two class A buildings on Boyle Avenue for the Hollenbeck Home.

Emil Firth, 346 South Broadway, is planning to build a number of four and five-room bungalows at Harbor Boulevard Gardens, between Main and Figueroa streets, just south of the city limits.

The Reliance Building Co., San Fernando Building, is erecting a six-unit frame and plaster bungalow court on Bonnie Brae Street, near Santa Ynez Street. Each unit will be two stories high and will contain five rooms. Cost, $20,000.

Bids are now being taken for the Woman's Club auditorium on Hollywood Boulevard. This structure will have a frontage of 120 ft. and a depth of 70 ft. and will seat one thousand people.

Architects Allison & Allison, 1405 Hibernian Building, Los Angeles, have been commissioned to prepare plans for new grade schools to be erected at Santa Monica. Bonds to the amount of $350,000 have been voted and sold. Two new buildings will be erected, and additions and improvements will be added to two other buildings.

Long Beach.

The contract to erect a two-story, sixteen-room, four-apartment building at 209 Roswell Avenue, Long Beach, has been awarded to George A.Threlkeld.

G. D. Sanford has been awarded the contract, at $74,387, for erecting a two-story brick and plaster building on East Ocean Boulevard for the Chamber of Commerce. Specifications call for a basement, auditorium, stage, dressing rooms, balcony, kitchen, general lobby, mezzanine floor, social lobby, club and directors' rooms.

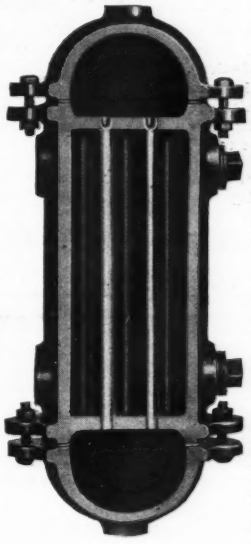
A company of investors has recently been incorporated with a capital stock of $50,000 to erect homes in the harbor district of Long Beach, Wilmington and San Pedro.

Architects John Parkinson and Donald B. Parkinson are preparing plans for a seven-story hotel to be erected at the corner of Cedar Avenue and Broadway. The structure is to be of reinforced concrete, 50x150 ft., and will cost $400,000.

Other Cities in the State.

Associated architects of Los Angeles and Long Beach are planning for a group of high school buildings to be erected on a site between Azusa and Glendora for the Citrus Union

Keep Your Customers in Hot Water at Minimum Cost



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It is built on the **tubular-principle**—the most dependable type of water-heater—now in standard use by the world's navies.

THE BURT WATER HEATER

connects to outside of any boiler, steam, hot water or vapor. Will last a lifetime. No attention needed. Costs practically nothing to maintain.

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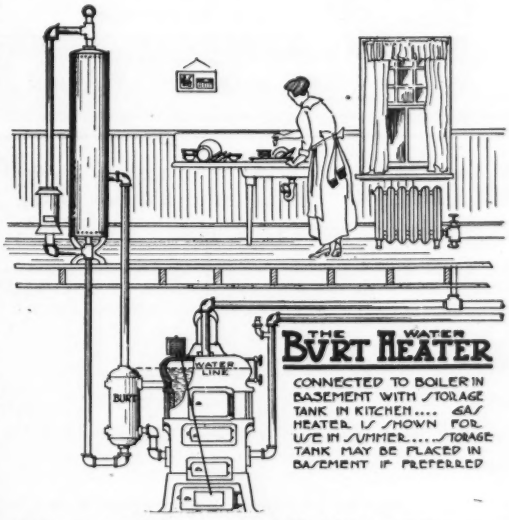
THE BURT WATER HEATER
CONNECTED TO BOILER IN BASEMENT WITH STORAGE TANK IN KITCHEN.... GAS HEATER IS SHOWN FOR USE IN SUMMER.... STORAGE TANK MAY BE PLACED IN BASEMENT IF PREFERRED

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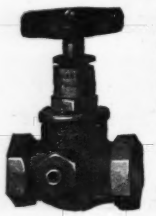

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No fumes, odor or dirt.

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Canadian Distributors:
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STERLING SYSTEMS

Sterling Combination Pump Strainer and Lift Fitting

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High School District. Bonds in the sum of $300,000 have been sold to meet the expense.

Ground will be broken during the present month for Pomona's new high school building group to cost $425,000. The group will include an academic school building, manual arts, housing shops and machinery and a gymnasium for the physical education department.

Plans have been prepared for a two-story brick building 50x85 ft. to be erected in Glendale for W. L. Sherwood. It will contain two stores, fourteen rooms and six baths finished in marble and tile.

The First Congregational Church of Glendale is to build a $60,000 church on the present site, at the northwest corner of Central and Wilson avenues. A building committee has been appointed and the contract will be awarded as soon as details can be arranged.

Jarboe & Murray, of Holtville, Calif., have been awarded the contract for building a new $48,000 school house at Eighth and Wensley Avenues, El Centro. Don Wells and William Cass are the architects.

The Methodist Episcopal Church of Imperial expects to build a church which will contain, besides auditorium for service, Sunday school rooms and Epworth League meeting rooms, gymnasium and shower baths. There will also be a roof garden where social events in connection with the church organizations will be held. The structure will cost about $30,000.

Architect Theodore C. Kistner has prepared plans for a new $125,000 high school at Coronado.

Oregon

Portland.

W. S. Fleming, plumbing and heating contractor in Portland, has moved his establishment from 86 Broadway to 292 Washington Street. Mr. Fleming has recently secured plumbing and heating contracts amounting to nearly $160,000. The most notable of these are the plumbing and heating in the new Elks Temple, $83,250; plumbing and heating in the Ambassador Apartments, $40,850; plumbing and heating in the Ballou & Wright Building, $8,650; plumbing and heating in the new Springfield High School, $6,352; plumbing and heating in the new Silver-Lake High School, $4,981; heating in O'Donnel Bros. Meat Co., at Bend, $5,200; plumbing and heating in the new St. Charles Hospital, at Bend, $7,644.

Architects Fitzhugh & Byron, Phoenix, Ariz., have completed plans and specifications for the construction of a $30,000 theater building in Mesa. It will be built by George A. Johnson. The new building will provide space for a theater, offices and two stores. Frank Samuels, of Mesa, is the contractor and he will receive bids from sub-contractors.

San Antonio, Texas.—A. H. Shafer has been awarded the contract to install plumbing in the residence of Martin Arnold. The contract amounts to $1,322.

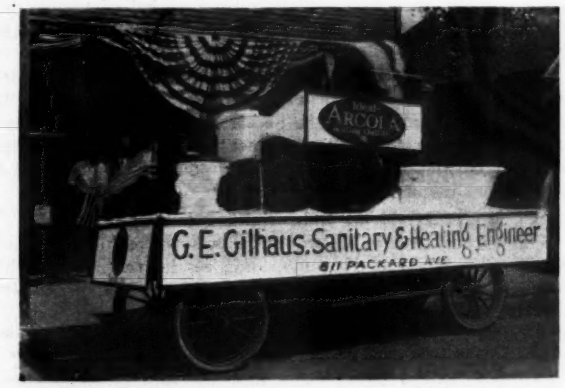
Spring Grove, Pa.—Jesse Zeigler is installing plumbing and heating in the apartment and garage buildings of C. A. Cromen, being erected in Abbottstown, and in the garage of P. R. Stambaugh, in Spring Grove.

Wildwood, N. J.—Saunderson & Martin, Pine Avenue, have just completed the installation of the heating system in the new post office building erected in this city. Plans for the system, which has been highly praised by government officials, were prepared by Mr. Saunderson.

Kansas

An Attractive Plumbing Float.

The accompanying reproduction of a photograph shows the float which G. E. Gilhaus, of Kansas City, Kansas, entered in a recent parade in that city to celebrate the opening of the new Twenty-third Street bridge connecting Kansas City, Kansas, with Kansas City, Mo. The float attracted considerable attention because of the unique manner in which it was arranged. In the front, resting on a platform directly on top of the engine hood, was a low-down closet combination, while on a board dropping over the front of the machine was a large "Bath a Day" poster. On the rear platform of the float were a shower and bathtub. The photograph was taken in front of Mr. Gilhaus' shop which is also decorated for the occasion.



G. E. Gilhaus' Float in a Recent Parade in Kansas City, Kans.

Indiana

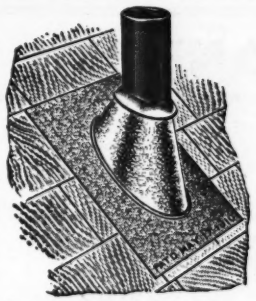
Plan More Public Comfort Stations for Indianapolis.

The building of more public comfort stations in the downtown business district; the construction of additional playgrounds and swimming pools and plans for the repealing of the ordinance requiring property owners to install sanitary plumbing or septic tanks, are among the civic projects outlined by Samuel Lewis Shank, newly elected mayor of Indianapolis, in a statement dealing with his program for the early part of his approaching administration.

Mr. Shank says he intends to propose at the first meeting of his board of public works that a comfort station be constructed at Market and Pennsylvania streets, and that other stations be built later. At present there is only one public comfort station. It is at Kentucky Avenue and Illinois Street, One of Mr. Shank's campaign pledges was that additional comfort stations would be constructed.

"All through my campaign I promised that I would see to it that more small playgrounds and swimming pools are built in some of the poorer districts," said the mayor-elect. "I am going to carry out that promise. I want all these playgrounds to be equipped with swimming pools because there are fewer bathtubs in the districts in which they will be situated than in some other parts of the city."

Mr. Shank also pointed out that he would be carrying out another campaign promise by taking steps to bring about



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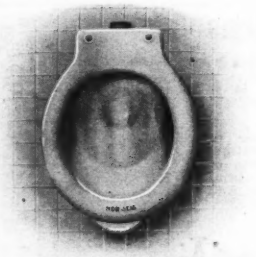

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Illustrating in a clear distinct manner the complete absence of soiling surface in the "MOR-SEAL" closet.
Note the complete absence of the Soiling Hump on upper trapway also the large water surface.
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IMMEDIATE DELIVERY
STANDARD AND HIGH PRESSURE
Our High Pressure Glasses have fused ends and are annealed by special process. Try them for highest steam pressures.
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That was years ago. Now Kewanee has proved it can be done.

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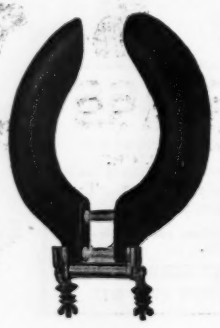

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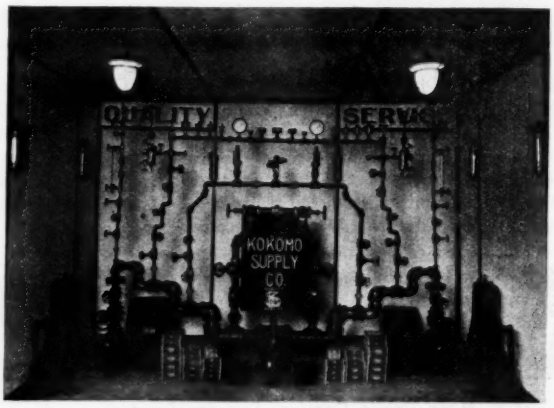
the repeal of the new plumbing ordinance, which requires all property owners to install sanitary plumbing or install septic tanks. The measure was passed by the city council with a view to ridding the city of open vaults.

"There are lots and lots of poor people who own their own homes but who cannot afford to stand the expense of making these improvements at this time, while many are out of work," said Mayor Shank. "I am going to try to get that ordinance repealed at once and then adopt a zoning system for requiring the sewer connections, making those in the business district put in the connections first, thus taking about four years to complete all the improvements. In the meantime I am going to try to have a bill passed at the next session of the legislature providing for property owners to pay for these sewer connections over a period of ten years in about the same way as they pay their Barret law assessments on streets and sidewalks."

August Buschmann & Sons, Inc., jobbers in plumbing supplies, recently perfected a plan through which the small property owner may have the necessary improvements made and then pay for them on a payment plan, as stated in last week's issue of "Domestic Engineering," and many Indianapolis home owners are taking advantage of this plan.

Exhibit at Industrial Exposition.

The accompanying illustration shows the exhibit of the Kokomo Supply Co., Kokomo, Ind., at the recent Seventh Annual Industrial Exposition held in that city. The exhibit was prepared by R. C. Brock, president of the company, and Louis F. Fee, secretary. The entire layout is composed



Kokomo Supply Co.'s Exhibit at the Recent Industrial Exposition in Kokomo, Ind.

of pipe and fittings, valves, water gauges, injectors, die stocks and belt wheels and supports arranged in a most attractive manner. The Industrial Exposition is an annual affair in Kokomo, and during the last seven years the Kokomo Supply Company has taken an active interest in the expositions.

Gary.

Building operations in Gary this year continue to surpass those of 1920, according to figures compiled by the city building commissioner. The report for the month of Octber showed the valuation of the permits issued during the month exceeded those of 1920 by approximately $140,000. This condition prevails throughout the entire first ten months of the year. Since the first of the year about 850 building permits have been issued in Gary with a valuation totaling more than $3,000,000. In October, 49 permits were issued with a valuation of $304,750 as compared with 41 permits totaling $165,646, in 1920.

Hubert F. Danielson, proprietor of a plumbing establishment in Gary, has filed a petition in bankruptcy in the federal district court at Hammond.

Legal Questionnaire

(Continued from Page 357.)

ly contemplated, and the performance of which depended entirely on the pecuniary ability of the promisee to take up the notes at the time when they matured. The notes having been taken in payment, and the right of lien thereby surrendered, it could not afterwards be revived by the mere fulfilment by the promisee of his contract as indorser with the holders of the notes."

You see that the court gives very good reasons why you should not be allowed the advantage of a note holder and a lien claimant at one and the same time. It is not material, according to this decision, that you have done nothing with your notes, have not put them out of your own hands or are willing to surrender them, for your right to a lien was lost when you took the notes which matured later than the expiration of the time for the commencement of lien proceedings, and the mere fact that the owner's financial standing has changed since you took the notes will not suffice to revive a lien right which you had previously lost.

In another case in your state, a contrary finding of law was made because it was proved that the notes were taken to accommodate the owner and that there had been an express understanding that the notes were not taken in satisfaction of the debt. And this was stated as the law even though some of the notes were still outstanding in the hands of third parties at the time when the contractor was enforcing his lien rights, for the reason that the note transaction was undertaken with a definite understanding that it was for the benefit of the owner and not in lieu of any lien rights which the contractor had.

Where other security than a promissory note is taken by the contractor, the various states differ as to whether it does or does not extinguish the lien right, some of them holding that the lien is waived when security for the debt is taken, and others holding that it is not waived unless such was the intention of the parties, or unless the taking of the security is inconsistent with the existence or enforcement of the lien. It has been held that the lien is waived by the taking of a mortgage on the property subject to the lien, by taking a pledge, or by accepting the note of a third party, or the note of the owner with a third party as joint maker, indorser, surety or guarantor.

But those courts which hold that the taking of a security amounts to a waiver of the lien right, also hold that the contract, promise or property taken must have been intended and accepted as collateral security before the lien can be said to have been waived or defeated. Thus receiving an assignment of insurance policies on the building has been held not to have been a waiver of the lien, for the evident reason that insurance merely protects the contractor against loss of the property subject to the lien.

Some courts have even gone so far as to hold that where the contractor, who furnishes materials for the improvements, on land, retains title in them until they are paid for, he is not prevented thereby from enforcing his lien rights.

Any act which will render it inequitable for a party to enforce his lien rights may operate to prevent a contractor from enforcing his lien rights, but the acts or statements of a lien claimant will not prevent his enforcement of a lien where he has not misled or induced the owner to change his position by his acts or statements. For instance, where an owner has settled with a general contractor relying upon a receipt which the subcontractor had given for his bill, the subcontractor could not thereafter successfully enforce his lien right. In the same way, where an owner pays a general contractor relying upon the subcontractor's statement that the general contractor had paid him, or where the subcontractor expressed a desire that the owner should pay the general contractor direct, for the subcontractor's materials and work, the subcontractor cannot then turn around and

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Saves Fuel Labor
Manufactured only by
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are high grade, insuring maximum service and minimum expense.

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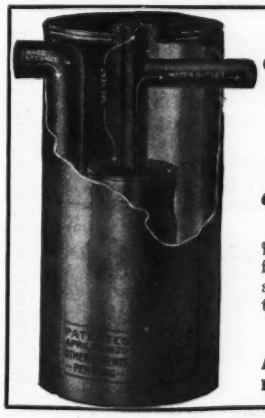

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HOUSEHOLD
Septic Tank
and keep your customers' good will—for
It is permanently adjusted at the factory and requires no attention after installation. Costs little—and there is good profit for you as well.
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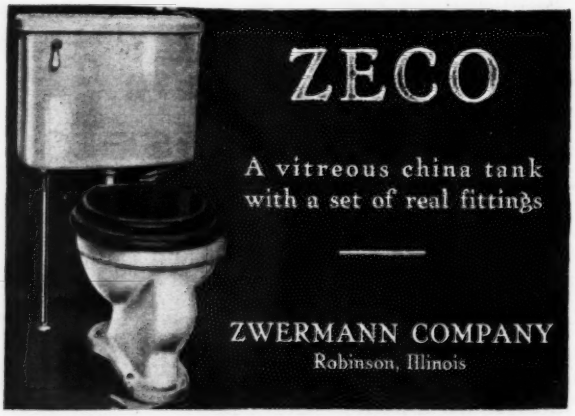

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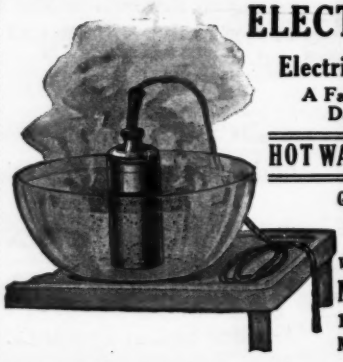

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A Faithful Servant, Day or Night.
HOT WATER INSTANTLY
Guaranteed never to burn out.
A profitable line for the dealer.
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Cannot Overflow

No matter how badly the APEX Closet Bowl may be clogged, the non-overflow arrangement is certain of action.

Clean-out device located at head of trap where obstructions above sewer pipe can be easily removed without clean-out tools.

Get an APEX, try it out—you'll be more than pleased.

Write for details.

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claim a lien, for he has induced the owner to change his position to his disadvantage.

It is therefore evident that unless you had some understanding with your owner that you were not taking the notes in payment, you now have no right to collect your bill by enforcing a mechanic's lien.

New Business Ventures

Wilmington, Del.—Joseph Dewey has opened a plumbing business at 302 North Franklin Street.

Red Bank, N. J.—Wm. V. Dieterich has opened a plumbing and heating business at 42 Leighton Avenue.

Wilmington, Del.—John Wharry, Jr., has recently opened a plumbing and heating establishment at 622 Connell Street.

Wilmington, Del.—John P. Curran has recently opened a plumbing and heating establishment at 1815 West Sixteenth Street, in that city.

Covington, Ky.—The John T. Underhill Plumbing Co. has been incorporated with a capital of $10,000. The incorporators are John T. Underhill, C. L. Smarr and Leah Smarr, all of Covington.

Business Changes

Richmond, Calif.—E. P. Allen, formerly located at 309 Twenty-third Street, in this city, has opened a plumbing establishment at 2409 Macdonald Avenue.

Wilmington, Del.—The plumbing firm of Pierce & Middleton has been dissolved and the business is now being conducted by P. E. Middleton at 2307 Jessup Street.

York, Pa.—The plumbing and heating business of Picking Bros., 240 South George Street, is now being conducted under the firm name of Picking Bros. & Neuhaus at 236 South George Street.

Lake Placid, N. Y.—The plumbing, heating and hardware business of Frank G. Walton has been purchased by Carl Strobel, William E. Hovey and Luke Perkins. The opening of the new business will take place on January 1, 1922. Mr. Strobel was formerly with the Lake Placid Club; Mr. Hovey has been an employe of the local railroad in its office, and also connected in a similar way with the New York Central in Rochester, N. Y., and in Montreal, Canada, and Mr. Perkins has been for a number of years superintendent of the plumbing and heating department of Mr. Walton. The business has an established reputation in upper New York state. Lake Placid is a fashionable summer resort in the Adirondacks, and also has a substantial winter population.

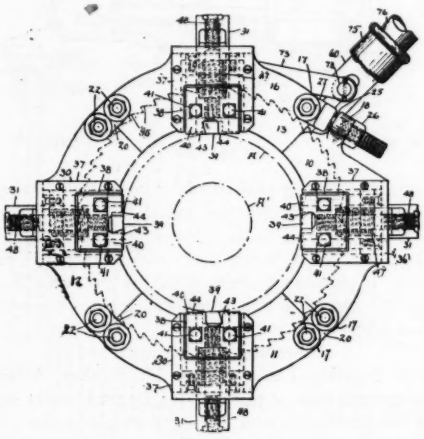
Huntington, W. Va.—R. H. Holtzworth has been awarded the contract for the installation of plumbing in the new South Side Junior High School in this city. Consideration $12,645.

Wilmington, Del.—Alfred A. Dorsey, one of the progressive plumbing and heating contractors of this city, has recently secured the contracts to install heating systems in a large number of cottages for railroad shop laborers, the department store of J. J. Gilbride, and the residence of John Potts in Northeast, Md. Mr. Dorsey is also remodeling the heating system in the Hotel Cassedy.

Patents

Heating Department.

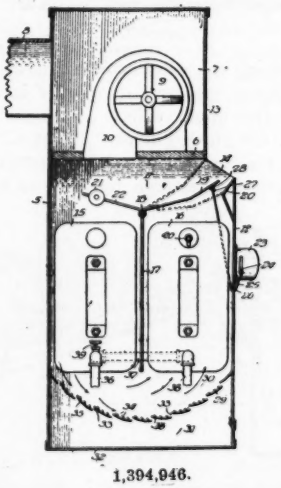
1,394,781. Pipe-Cutter. Ira W. Nonneman, Warren, Ohio, assignor to The Borden Company, Warren, Ohio, a Corporation of Ohio. The combination of a set of arcuate sections all of them except the extreme sections hinged together to make an openable frame, means for removably securing the extreme sections together to make the frame continuously annular, radial guideways carried by the sections, housings having ribs occupying the guideways, ratchet teeth on said ribs,



1,394,781.

pawls therefor carried by the sections, slidable blocks in the housings, knives carried by said blocks, and springs pressing the blocks inwardly.

1,394,946. Ventilating Unit. Wilfred Shurtleff, Moline, Ill., assignor to Moline Heat, Moline, Ill., a Corporation of Illinois. In a ventilating unit of the class described the com-



1,394,946.

bination of a housing having an air inlet and an outlet, a partition dividing the housing below said outlet into rear and front passageways connected at their lower ends, a radiator structure in each passageway, said radiator structures being connected serially for the flow of steam therethrough, a damper hinged at the upper end of said partition and adapted

When you order Bibbs, Cocks, Stops and Valves, be sure that you specify

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Post Pipe Vise

Holds Tight and Firm Anywhere

Can be attached to any wood or iron, round or square post, pole or tree.

Jaws of best tool steel, hardened and drawn. Will not crush or allow pipe to slip. Made in two sizes.

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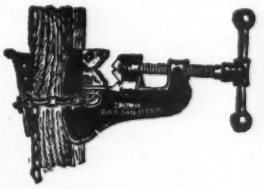

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Something New

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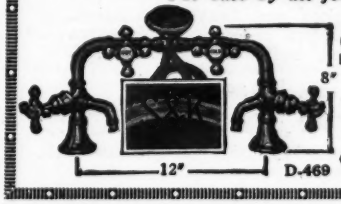
For sale by all jobbers.



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Cistern and Riveted
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They not only *last* but give continuous, satisfactory service.
Made in any size, pressure or capacity desired.

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Retlaw Telescopic Roof Flange

A ONE-PIECE LEAD FLANGE, 4 LBS. TO SQ. FT.

Drawn into circular corrugations.
Extremely pliable—no seam.
Allows for settling of roof or pipe.
Adjustable to any angle.
Allows for contraction and expansion.
Collapse one side—draw out other.
Draw up band, compressing lead around pipe.
On like a flash—costs less than hand made.
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Write for Folders No. 21D and 30D.
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Ellwanger Bros.
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The Home of Good Leather Goods

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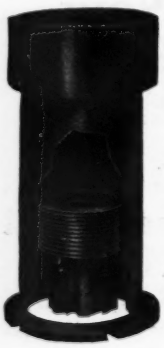

DESIGNED especially for pipe work. Saves time and makes the best installation. Shipped complete. No extra dies, bolts or nuts required.

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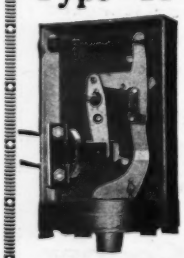
Type "R" Penn Pressure Switch



When you are called to repair an automatic electric pump, nine times out of ten the fault is with the switch.

This does not happen where pumps are equipped with the

Type "R" Penn Pressure Switch

After the most rigid tests and actual service Penn Switches have been adopted by the leading pump makers of the country.

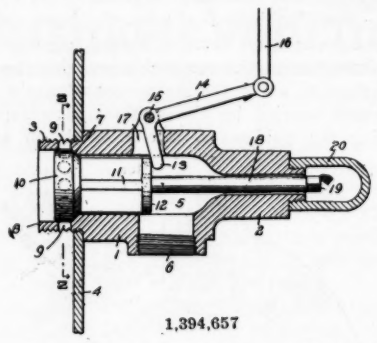
Plumbers who install Penn equipped pumps may be sure of good service and lasting satisfaction.

Manufactured by

PENN ELECTRIC MACHINE CO.
114 Eighth Street :: DES MOINES, IOWA

to swing in said outlet to control the connection of said outlet with said front passageway and with said air inlet.

1,394,657. Blow-Off Valve. Peter Wertz, Pittsburgh, Pa. A valve for the purpose described, comprising a casing provided with a continuous passage therethrough from end-to-end thereof, a valve seat formed in the casing adjacent to its inner end, a disk valve co-operating with said seat, a stem secured to said valve and extending beyond the outer end of said passage and provided with a laterally projecting shoulder, an operating lever pivotally connected to the casing and

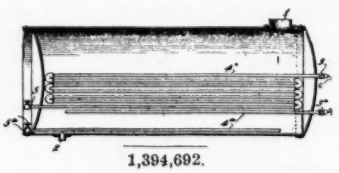


1,394,657

having an arm engaging said shoulder, a portion of the casing projecting inwardly beyond the valve seat and surrounding the valve and provided with transverse inlet openings, the inner end of the casing being open and placing the rear end of the valve in communication with the pressure fluid controlled by the valve, and a member closing the outer end of the casing.

Plumbing Department.

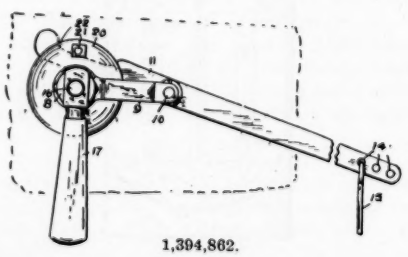
1,394,692. Heating-Tank. James M. Stocker, Atlanta, Ga. In combination, a tank, a plurality of steam coils in said tank extending longitudinally and arranged adjacent the sides and bottom thereof, each coil having independent means for controlling the supply of steam at one end and independent



1,394,692.

means for controlling the exhaust of steam at the other end, the lower coils being constructed to offer less resistance to the steam than the upper coils.

1,394,862. Lift for Flush-Valves. Milton C. Reno, Corliss, Pa. A lift for the purpose set forth comprising a sleeve adapted to be extended through the wall of a flushing tank

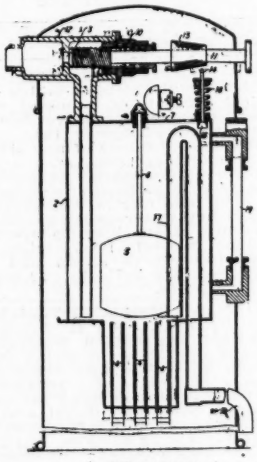


1,394,862.

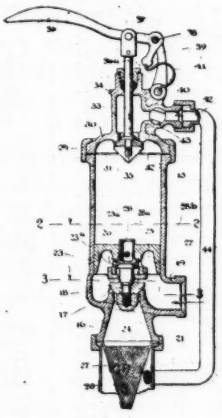
and provided on its inner end with a shoulder and its outer portion with peripheral threads and a squared portion between the threads and the shoulder, a shaft extending through the sleeve, a nut on the shaft, a nut inclosing the threaded portion of the sleeve and co-acting with the nut on the shaft to secure the sleeve to the wall, a pin carrying member on the inner end of the shaft, an elongated pin extended from said

member, a bracket integral with said shoulder and extended inwardly, a shaft secured to the bracket, a lift lever extending in the same plane throughout and pivoted on the shaft secured to the bracket and having its top edge depressed to provide a recess in which said pin operates to tilt the lever, and a weighted handle on the outer end of said shaft.

1,394,847. Electric Water-Heater. Charles Kratt, Nottingham, England, assignor to Filbar Electric Heater, Limited. An electric heater for heating and causing the delivery of a hot liquid including a tank connected with a supply pipe for the said liquid, a valve adapted to control the supply of the said liquid, an electric heating means associated with the said tank, a float within the said tank, means associated with the said float and adapted to switch on and off the current to the said electric heating means when the said float is moved, and means associated with the said controlling valve for enabling the outlet of air from the tank when the said controlling valve is opened.

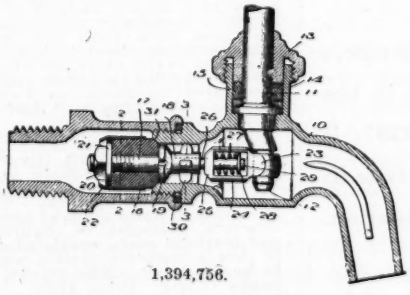


1,394,847



1,394,945.

1,394,945. Flush-Valve. George Doughman Showers, Altoona, Pa. A flush valve comprising, a cylinder having an inlet port and two communicating outlet ports, a manually operable valve controlling one of the outlet ports, a piston within the cylinder having a port therein, a gravity valve having a port therein, said gravity valve being within the piston and controlling the piston port, a valve carried by the first valve and controlling said gravity valve port, and an outlet valve carried by the piston and controlling the other of said outlet ports.



1,394,756.

1,394,756. Elastic-Valve Stem. Philip Mueller and Anton C. Schuermann, Decatur, Ill., assignors to Adolph Mueller, trustee, Decatur, Ill. In a cock or faucet of the Fuller ball type, the combination of a cock body having a valve seat, an elastic ball valve, an eccentric valve operating stem, an eccentric strap on said stem, a telescope connection between said valve and strap, and a spring in said connection to permit said valve to be brought yieldingly against its seat.

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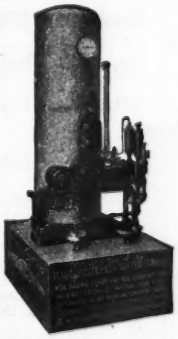

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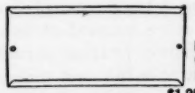

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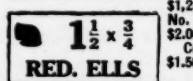

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